

THE POLYCHAETE FAUNA OF SOUTH AFRICA
PART 8: NEW SPECIES AND RECORDS FROM
GRAB SAMPLES AND DREDGINGS

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CONTENTS

	<i>Page</i>
INTRODUCTION	383
STATION LISTS	384
SYSTEMATIC ACCOUNT	386
REFERENCES	443

SYNOPSIS

Recent marine collections by the University of Cape Town have revealed 27 new species of Polychaeta and 32 new records for South Africa. These are described. A new family is erected for the genus *Cossura* and three new genera are defined. The family Paraonidae is revised and a key to 17 species is drawn up.

INTRODUCTION

THE marine fauna of South Africa is at present being surveyed along a number of transect lines extending from the coast out to the edge of the continental shelf. Seven lines have been worked between Lamberts Bay on the Atlantic Coast and East London on the Indian Ocean side. An analysis of earlier polychaete samples has been presented in two reports (Day, 1960 and 1961). New species and new records for South Africa obtained from later samples are described below.

An analysis of grab samples has shown that the Polychaeta are the dominant group of benthonic animals on soft bottoms around the Cape both as regards numbers of species and numbers of individuals. Surprisingly enough there is no indication that the number of species decrease down to 200 metres; rather the reverse since there are indications that polychaetes become more numerous as the substratum changes from sand to soft mud with increasing depth. Even at a depth of 1,250 metres a 0.1 metre square van Veen grab brought up 17 species. Of course most of these species are small, many of them less than 20 mm. in length and some as small as 4 mm. These escape when a dredge is drawn up from deep water and can only be obtained by grab samples which are carefully washed through a fine sieve of 1 mm. mesh. The Polychaeta obtained by earlier dredgings around the Cape contained 171 errant species and 166 sedentary ones. The new grab samples contain representatives of many of these and in addition 32 new records for the area and 27 new species.

No attempt will be made here to list new locality records of well known species since these and earlier records will shortly be summarised in a monograph. Only

the new species and those which show major extensions of range are described. Among them are two new genera of the family Syllidae and one new genus of the family Nereidae. The discovery of five species of the family Paraonidae, in addition to the seven already reported, has provided an opportunity for revising the genera of this family and a key covering 17 species is given. In addition a new family is erected to contain the genus *Cossura* which differs widely from other genera of the family Cirratulidae.

The material upon which the present report is based was obtained with the help of funds from the South African Council of Scientific and Industrial Research to which I am very much indebted. Further, the Ernest Oppenheimer Memorial Trust made a generous grant which allowed me to work at the British Museum (Natural History) for the best part of a year. In this way I was able to compare South African material with the types or at least with identified specimens from the type locality. As a result certain types have been redescribed, several erroneous records have been removed from the South African list and many doubtful records have been confirmed.

I wish to thank my many friends at the British Museum (Natural History) for their help and courtesy during my visit, particularly Dr. F. Fraser, the Keeper of Zoology and Mr. R. Sims of the Annelid Section.

The types of all new species will be deposited in the British Museum (Natural History).

STATION LISTS

Collection data are given in the station lists below. In the systematic section the collection data for each species are given in a summarised form. Thus the records for the first species *Harmothoe antilopis* are shown as SCD 207 (1), 237 (1). This means that one specimen was found at station SCD 207 and one at station SCD 237. Reference to the station lists shows that SCD stands for south coast dredging and that station 207 was made on 30.11.60 at 34° 51' S/23° 41' E in 183 metres on a bottom of khaki coloured sand. Full details of other records can be obtained in the same way.

DREDGE AND VAN VEEN GRAB STATIONS OFF THE WEST COAST OF THE CAPE PROVINCE— SYMBOL WCD

Station No.	Date	Position	Depth (metres)	Bottom
WCD 41	2.5.60	33° 06' 5' S./17° 56' 7' E.	18-33	R.
WCD 53	15.7.60	34° 11' S./18° 13' E.	148	kh. S. M.
WCD 60	21.9.60	32° 04' 7' S./18° 12' E.	96	gn. M.
WCD 61	21.9.60	32° 05' S./18° 06' E.	108	gn. M.
WCD 63	21.9.60	32° 05' S./18° 06' E.	108	gn. M.
WCD 64	21.9.60	32° 05' S./17° 56' E.	128	gn. M.
WCD 65	21.9.60	32° 05' S./17° 56' E.	128	gn. M.
WCD 66	21.9.60	32° 05' S./18° 14' E.	83	?
WCD 67	22.9.60	32° 44' S./18° 01' E.	11	bl. M.
WCD 73	8.10.60	34° 25' S./17° 36' E.	1240	kh. M.
WCD 79	8.10.60	34° 17' S./17° 53' E.	320	gn. S. M.

Station No.	Date	Position	Depth (metres)	Bottom
WCD 82	21.9.60	32° 05' S./17° 56' E.	128	gn. M.
WCD 83	8.10.60	34° 17' S./17° 53' E.	320	gn. S. M.
WCD 85	3.7.61	33° 06.4' S./17° 44.9' E.	146	gn. bl. M.
WCD 86	3.7.61	33° 06.4' S./17° 44.9' E.	146	gn. bl. M.
WCD 87	3.7.61	33° 06.2' S./17° 49' E.	88	d. gn. M. R.
WCD 90	2.7.61	32° 05' S./18° 16.7' E.	39	co. wh. S. & Sh.
WCD 91	2.7.61	32° 05.5' S./18° 17.3' E.	27	co. wh. S. & Sh.
WCD 92	2.7.61	32° 05' S./18° 16.7' E.	39	co. wh. S. & Sh.
WCD 94	2.7.61	32° 05.3' S./18° 15.8' E.	54	S.
WCD 97	3.7.61	33° 04.2' S./17° 49' E.	88	d. gn. M. & R.
WCD 103	2.7.61	32° 05.3' S./18° 15.8' E.	54	kh. M.
WCD 106	3.7.61	33° 06.5' S./17° 32.9' E.	183	d. gn. M.
WCD 108	2.7.61	32° 08' S./17° 39' E.	172	f. d. gn. M.
WCD 109	2.7.61	32° 08' S./17° 39' E.	172	f. d. gn. M.
WCD 110	2.7.61	32° 08' S./17° 39' E.	172	f. d. gn. M.
WCD 112	3.7.61	33° 06.4' S./17° 47.2' E.	141	d. gn. M.
WCD 115	3.7.61	33° 06.5' S./17° 32.9' E.	183	d. gn. M.
WCD 116	3.7.61	33° 06.5' S./17° 32.9' E.	183	d. gn. M.
WCD 118	3.7.61	33° 06.4' S./17° 44.9' E.	146	gn. bl. M.
WCD 121	2.7.61	32° 08' S./17° 39' E.	172	f. d. gn. M.
WCD 122	2.7.61	32° 08' S./17° 39' E.	172	f. d. gn. M.

DREDGE AND VAN VEEN GRAB STATIONS IN FALSE BAY—SYMBOL FAL

Station No.	Date	Position	Depth (metres)	Bottom
FAL 284	23.9.54	Roman Rock (diving)	12-14	S. Sh.
FAL 342	31.1.59	34° 11' S./18° 35.5' E.	44	f. br. S.
FAL 375	25.2.59	34° 16.8' S./18° 42.8' E.	60	gn. S. Sh.
FAL 390	15.11.60	34° 12.6' S./18° 29.1' E.	40	kh. M.
FAL 397	15.5.61	34° 12.5' S./18° 37' E.	48	kh. S. & Sh.
FAL 406	16.5.61	34° 08.8' S./18° 33.5' E.	31	f. kh. S.
FAL 413	15.5.61	34° 12.5' S./18° 37' E.	48	kh. S. & Sh.
FAL 419	15.5.61	34° 12.5' S./18° 37' E.	48	kh. S. & Sh.
FAL 422	15.5.61	34° 12.5' S./18° 37' E.	48	kh. S. & Sh.
FAL 424	15.5.61	34° 12.5' S./18° 37' E.	48	kh. S. & Sh.

DREDGE AND VAN VEEN GRAB SAMPLES OFF THE SOUTH COAST OF THE CAPE PROVINCE—
SYMBOL SCD

Station No.	Date	Position	Depth (metres)	Bottom
SCD 130	3.6.60	34° 48' S./22° 06' E.	100	co. kh. S.
SCD 136	28.8.60	34° 35' S./21° 56' E.	78	co. & f. Sh.
SCD 154	25.11.60	34° 03' S./25° 59' E.	84	R.
SCD 156	25.11.60	34° 03' S./25° 59' E.	84	R.
SCD 170	24.11.60	33° 58.9' S./25° 41.4' E.	4-11	R.
SCD 182	30.11.60	34° 20' S./23° 31' E.	110	R. kh. S.
SCD 185	25.11.60	34° 13' S./26° 04' E.	124	gr. gn. S.
SCD 187	30.11.60	34° 10' S./23° 32' E.	97	gn. M.
SCD 193	29.11.60	34° 04.3' S./23° 25.8' E.	45	gn. M.
SCD 197	29.11.60	34° 07.5' S./23° 31.7' E.	79	f. S.
SCD 200	30.11.60	34° 10' S./23° 32' E.	97	gn. M.
SCD 207	30.11.60	34° 51' S./23° 41' E.	183	kh. S.
SCD 212	24.11.60	33° 58.8' S./25° 42.2' E.	26	co. S. br. Sh.

SCD 214	.	25.11.60	.	34° 03' S./25° 58' E.	.	78	.	co. gr. S. br. Sh.
SCD 215	.	25.11.60	.	34° 03' S./25° 58' E.	.	78	.	co. gr. S. br. Sh.
SCD 218	.	25.11.60	.	34° 03' S./25° 58' E.	.	78	.	co. gr. S. br. Sh.
SCD 220	.	29.11.60	.	34° 02' S./23° 28.4' E.	.	49	.	S.M.R.
SCD 223	.	25.11.60	.	34° 13' S./26° 04' E.	.	124	.	gr. gn. S.
SCD 227	.	29.11.60	.	34° 07.5' S./23° 31.7' E.	.	79	.	f. S.
SCD 228	.	5.12.60	.	35° 43.5' S./20° 31' E.	.	143	.	gn. M.
SCD 232	.	4.12.60	.	36° 28.5' S./21° 11' E.	.	183	.	kh. S.
SCD 233	.	4.12.60	.	36° 28.5' S./21° 11' E.	.	183	.	kh. S.
SCD 236	.	30.11.60	.	34° 51' S./23° 41' E.	.	183	.	kh. S.
SCD 237	.	30.11.60	.	34° 51' S./23° 41' E.	.	183	.	kh. S.
SCD 245	.	29.11.60	.	34° 02' S./23° 28.4' E.	.	49	.	S. M. R.
SCD 246	.	29.11.60	.	34° 02' S./23° 28.4' E.	.	49	.	S. M. R.
SCD 247	.	29.11.60	.	34° 04.3' S./23° 25.8' E.	.	45	.	gn. M.
SCD 251	.	30.11.60	.	34° 48' S./23° 39' E.	.	148	.	R.
SCD 275	.	30.11.60	.	34° 51' S./23° 41' E.	.	183	.	kh. S.
SCD 284	.	6.2.62	.	33° 01' S./27° 55' E.	.	7	.	f. wh. S.
SCD 288	.	6.2.62	.	33° 04' S./27° 57' E.	.	84	.	co. S. Sh.
SCD 298	.	6.2.62	.	33° 09' S./28° 02' E.	.	84	.	?

SYSTEMATIC ACCOUNT

Family APHRODITIDAE

Sub-family POLYNOINAE

Harmothoe antilopis McIntosh, 1876

(Text-fig. 1a-f)

Harmothoe antilopis McIntosh, 1876: 383, pl. 69, figs. 4-6; McIntosh, 1900; 334, pl. 28, fig. 13; pl. 32, fig. 16; pl. 38, figs. 24-25; Fauvel, 1923: 56, fig. 19 a-l.

RECORDS. SCD 207 (1), 237 (1).

NOTES. These South African specimens have been checked as identical with the types in the British Museum (Natural History) (No. 1921-5-1-437-438) obtained in 358-567 fathoms off Scotland by the "Porcupine".

The resemblance is in fact even closer than the published descriptions of the types would suggest. The type material consists of two broken specimens each about 20 mm. long. The prostomium (Text-fig. 1a) is roughly square, not tapered anteriorly, the anterior pair of eyes is large and their position is characteristic for they are directly below the small but well marked prostomial peaks. The median antenna is missing both from the types and the South African specimens but the laterals are present; they are small, tapered and, like the dorsal cirri, have numerous long papillae. The elytra (Text-fig. 1b) are oval with fringed margins and numerous chitinous tubercles (Text-fig. 1c) which are best described as tall crowns for they are cylindrical with 4-5 divergent projections at the truncate end. In the South African specimens (but not in the types) some of the tubercles near the posterior margin are twice the size of the rest and instead of blunt projections each has three saucer-like depressions the edges of which form prominent flanges (see Text-fig. 1c').

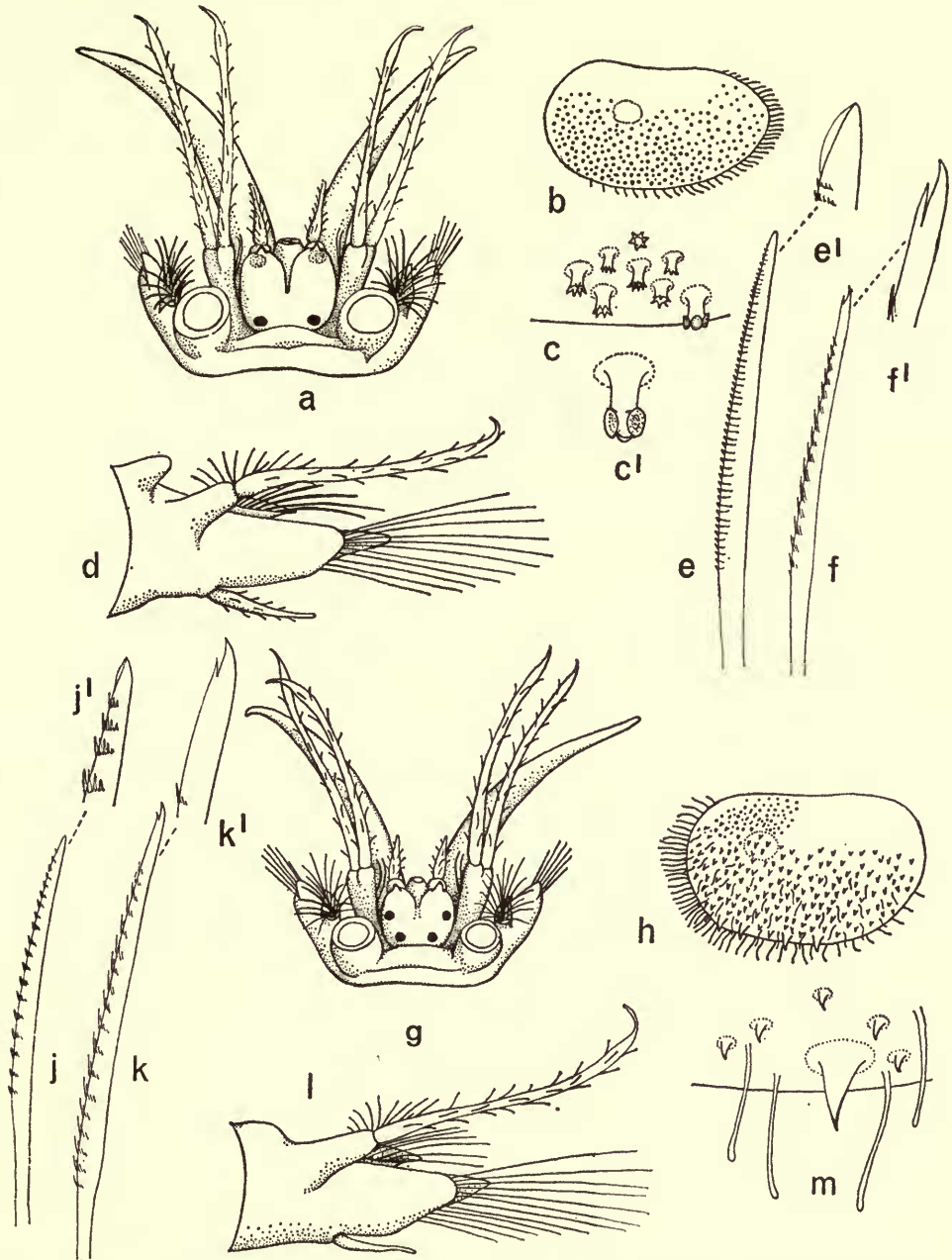


FIG. 1. *Harmothoe antilopis* : (a) head ; (b) elytron ; (c, c') details of elytrous tubercles near posterior margin ; (d) posterior view of parapodium ; (e, e') notoseta and details of tip ; (f, f') neuroseta and details of tip. *Harmothoe lagiscoides serrata* : (g) head ; (h) elytron ; (j, j') notoseta and details of tip ; (k, k') neuroseta and details of tip ; (l) posterior view of parapodium ; (m) details of elytrous tubercles near posterior margin.

The dorsal cirri (Text-fig. 1 *d*) are tapered and just shorter than the neurosetae. The notopodium is well developed and the neuropodium has a triangular presetal lip. The notosetae (Text-fig. 1 *e*) are much more closely serrated than the figures of McIntosh and Fauvel would suggest; the tips (Text-fig. 1 *e'*) are blunt and in the South African forms they are flanged. The neurosetae (Text-fig. 1 *f*) have about 15 rows of spinules and long naked and bidentate tips (Text-fig. 1 *f'*) with the secondary tooth half the length of the terminal one.

The two most characteristic features are the position of the eyes and the tall crowns on the elytra. Both *Harmothoe aquiseta* and *Antinoe epitoca* have the first pair of eyes antero-ventral in position but there are obvious differences in the elytra and setae.

H. antilopis seems to be a deep water species. It has long been known from the Atlantic coasts of Europe but when more samples have been obtained at the edge of the continental shelf its distribution may prove to be much wider than is known at present.

***Harmothoe lagiscoides serrata* subsp. n.** (Text-fig. 1 *g-m*)

RECORDS. WCD 112 (1).

DIAGNOSIS. Differs from *H. lagiscoides* (Willey, 1902) in having strongly serrated notosetae, neurosetae with long knife-bladed tips and only a single row of giant curved spines on the posterior margin of the elytra.

DESCRIPTION. The type locality is 33° 06.4' S/17° 47.2' E in 141 metres. The single specimen is an ovigerous female broken into four pieces, but if complete it would measure about 20 mm. The body is well tapered and creamy brown in alcohol.

The prostomium (Text-fig. 1 *g*) has well marked frontal peaks. The eyes are well developed and the anterior pair are about half-way back on the sides of the prostomium. The median antenna is missing but the laterals are present. They are obviously ventral in origin with stout ceratophores and small tapered papillose ceratostyles two-thirds the length of the prostomium. The palps and tentacular cirri are long and tapered and the latter are beset with long slender papillae.

The dorsal cirri (Text-fig. 1 *l*) are similar to the tentacular cirri and exceed the neurosetae in length. Anterior elytra are missing but those in the middle of the body are large, delicate and faintly reniform in shape (see Text-fig. 1 *h*). The lateral and posterior margins (Text-fig. 1 *m*) bear fringes of very long slender papillae with faintly knobbed tips. Similar papillae are scattered over the elytron surface but are difficult to see since the elytron is mottled with pale brown and bears numerous well marked chitinous tubercles. The tubercles near the anterior margin are minute and hemispherical but the great majority are stout thorns with faintly curved tips. They are scattered over the rest of the elytron and are uniform in size except for 4-5 in a row along the posterior margin which are much larger than the others.

The notopodia are normally developed and bear numerous notosetae. The neuropodia (Text-fig. 1 *l*) have pointed presetal lobes and shorter, more triangular post-

setal lips. The ventral cirri are very small, markedly tapered and do not extend to the base of the neurosetae. Nephridial papillae are well developed from setiger 5 onwards.

Notosetae vary in length and are slightly stouter than the neurosetae. An average notoseta (Text-fig. 1 *j*) has numerous strongly developed rows of serrations extending over more than half its length and the tip (Text-fig. 1 *j'*) is pointed and faintly flanged. The neurosetae also vary in length and development of the secondary tooth. An average neuroseta from the middle of the series (Text-fig. 1 *k*) has over 20 rows of long spinules and a long blade-like naked tip (Text-fig. 1 *k'*) with a small secondary tooth. As usual, superior neurosetae are finer with a better marked secondary tooth and inferior ones are shorter and stouter with a finer secondary tooth.

Wiley (1902) described *Harmothoe spinosa* var. *lagiscoides* from Antarctica. Bergström (1916) raised *H. lagiscoides* to species rank and Hartman (1953) agreed. According to Bergström the development of giant spines on the elytra is variable but Bergström, Hartman and Monro (1936) all agree that the notosetae are either smooth or only faintly serrated. It is in this character particularly that the South African form differs from the Antarctic species. Holotype: B.M.(N.H.), Reg. No. 1963.1.2.

Antinoe epitoca Monro, 1930

Antinoe epitoca Monro, 1930: 67, fig. 19 a-f.

RECORDS. FAL 406 (1).

NOTES. As far as I am aware this species has not been recorded since Monro's original description of the type from dredgings off Angola. The present record extends its range to False Bay. Monro's specimen lacked elytra but these are present on the Cape specimens and are large and oval with smooth surfaces and entire margins.

A. epitoca is easily distinguished from *A. lactea* Day by the position of the eyes under the prostomial peaks and the very much fainter serrations on the notosetae.

Subfamily SIGALIONINAE

Pholoe dorsipapillata Marenzeller, 1893

Pholoe dorsipapillata Marenzeller, 1893: 30; Fauvel, 1923, fig. 23 n-q.

RECORDS. SCD 298 (1).

NOTES. The single specimen is well preserved and permits me to modify Fauvel's description.

This species is broader and tougher than *P. minuta* and the elytra are very hard, almost brittle with successive layers of chitin forming marked concentric rings on the elytra. The median antenna arises from a short ceratophore and there is a papillose subterminal swelling preceding the filiform tip. It is usually stated that in all species of *Pholoe* there are no lateral antennae, but in this specimen there are

indications that minute lateral antennae are present fused to the dorsal surface of the bases of the tentacular cirri. Other points of difference from *P. minuta* are that *P. dorsipapillata* has a single tentacular cirrus, not two, and that there are numerous fine setae at the base. The neuropodium moreover has a long papilla at its apex and the shaft-heads of the neurosetae are more finely serrated than those of *P. minuta*.

Family PISIONIDAE

Pisione africana sp. n.

(Text-fig. 2 a-e)

RECORDS. SCD 136 (1 juv.); 170 (1-type); 212 (6 juvs.). FAL 419 (2 juvs.); 424 (2 juvs.).

DESCRIPTION. All specimens except one are juveniles 2-5 mm. long. The single adult from station SCD 170, dredged at 33° 58.9' S./25° 41.4' E. is designated the holotype. It is 15 mm. long with 75 segments and is uniformly pale in alcohol.

The prostomium (Text-fig. 2 a) is small, indistinct and almost completely fused to the enveloping peristome. A pair of cephalic eyes probably formed by the fusion of two pairs is visible through the skin at the level of setiger 1. The two pairs of jaws when dissected proved to be curved and pointed with flanged bases but have no teeth. The large cirriform palps arise from basal sheaths fused to the peristome. The latter is very large and extends forward completely embracing the prostomium and bears two pairs of tentacular cirri above the bases of the palps. The superior pair is long and tapered, simulating antennae, but the inferior pair is small and papilliform. Both pairs are essentially similar in structure to the cirri of setiger 1 and differ from the palps. The peristomial segment also has a pair of very large acicula whose expanded ends project through the skin in front of the mouth and probably assist in feeding. Their posterior ends diverge outwards and almost reach the bases of the first pair of parapodia. The first setigerous segment is relatively short and not very distinct from the peristomium. The parapodium consists of a papilliform dorsal cirrus similar to those of later segments, a conical setigerous lobe and a long tapering ventral cirrus which is directed forwards and just reaches the bases of the palps. Setiger 2 is essentially similar except that in the adult type specimen the dorsal cirrus is markedly larger than that of the first or third setiger. In juveniles this is not obvious. Later parapodia (Text-fig. 2 e) are uniform in structure. Each has a flask-shaped dorsal and ventral cirrus which is indistinctly jointed near the ciliated tip and a long setigerous lobe with small presetal and post-setal lips. No genital papillae were seen.

Each parapodium has two pale internal acicula and about 5 setae. The superior one (Text-fig. 2 b) is simple and stouter than the rest with an expanded, obliquely truncate end, sometimes incised to form indistinct teeth. The other setae are all compound. One is rather slender (Text-fig. 2 c) with a tapering sword-like blade and the other three (Text-fig. 2 d) have short, straight falcigerous blades.

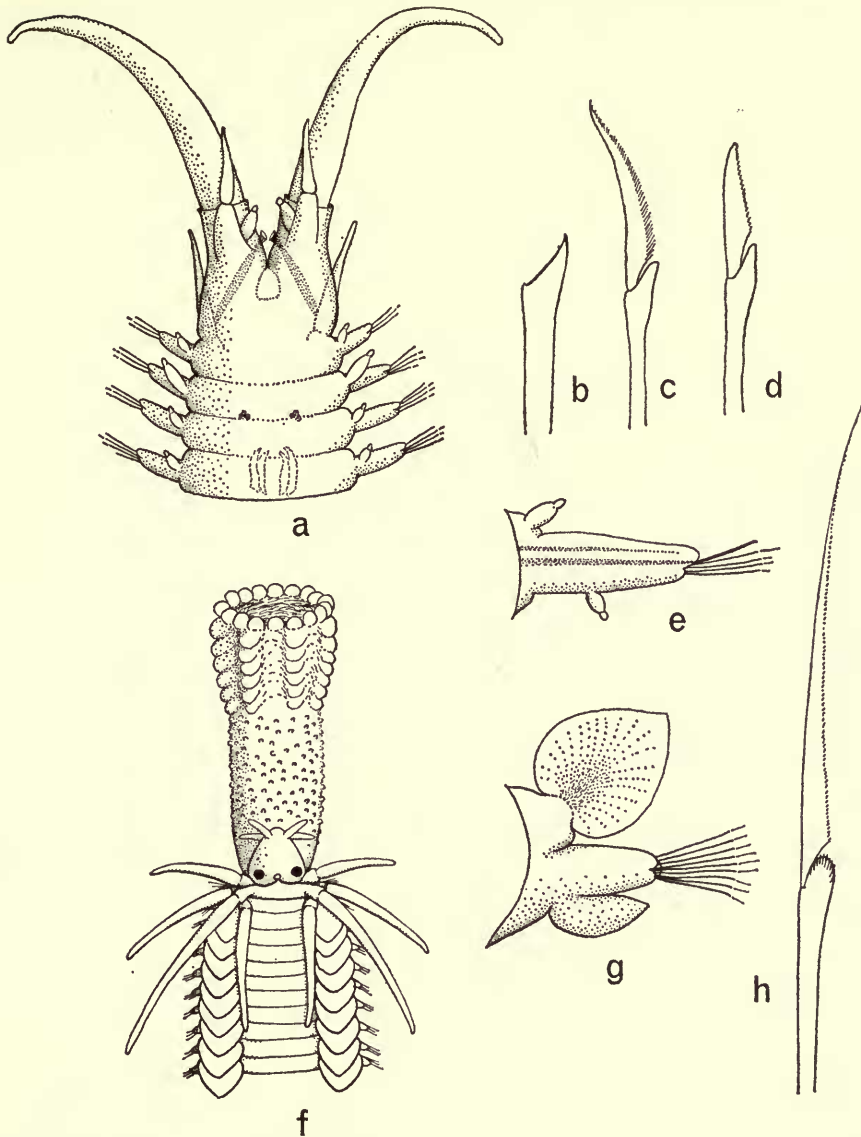


FIG. 2. *Pisione africana*: (a) anterior end; (b) superior simple seta; (c) superior compound seta; (d) inferior compound seta; (e) parapodium. *Phyllodoce schmardaiei*: (f) anterior end; (g) parapodium; (h) seta.

Pisione is a rare genus and Hartman (1959) listed only 6 species. *P. africana* differs from *P. remota* (Southern, 1914) in the character of the setae and the possession of an enlarged dorsal cirrus on setiger 2. In this it is closer to *P. oerstedii* Grube 1857 from Peru as redescribed by Ehlers (1901) but again the setae differ. In particular the possession of a compound seta with a long sword-like blade is characteristic.

There has been much discussion as to the homology of the large cirriform appendages with sheathed bases at the front of the head. Southern (1914) suggested that they are palps which have become attached to the large, forwardly produced peristome. This interpretation which is accepted here makes them homologous to the palps of *Pisionidens indica*. In the latter the prostomium is well developed and anterior to the peristome. It bears a pair of antennae and a pair of palps which also have sheathed bases. The peristome bears two normal pairs of tentacular cirri. In *Pisione* the tentacular cirri are dorsal to the palps and the inferior pair are greatly reduced. Holotype: B.M.(N.H.), Reg. No. 1963.1.12.

Family PHYLLODOCIDAE

Phyllodoce schmardaesi sp. n.

(Text-fig. 2 f-h)

Phyllodoce macrophthalma (non *Phyllodoce macrophthalma* Grube, 1857: 169.)? Schmarda, 1861: 84, pl. 30, fig. 234;? Ehlers, 1913: 454;? Day, 1960: 297.

RECORDS. FAL 422 (1).

DESCRIPTION. Hartman (1959) showed that the name *Phyllodoce macrophthalma* was first used by Grube 1856 and that Schmarda's name is a homonym. There is also some doubt as to whether the specimen described by Schmarda "in Atlantischen Meer" is identical to those from France described by Saint Joseph (1888), Fauvel (1923) and Day (1960). For these reasons the South African species is given a new name and described briefly below.

The holotype dredged in False Bay at station FAL 422 is 30 mm. long with 60 segments and when fresh it was uniformly green in colour.

The prostomium (Text-fig. 2 f) is cordate with rather long frontal antennae, a pair of large eyes and a small occipital papilla. The basal half of the proboscis is lightly papillose and the distal half has 6 rugose ridges. The first tentacular segment is fused to the prostomium and not visible dorsally, but the second and third are distinct and separate. All tentacular cirri are cylindrical and fairly long. Setae are present on tentacular segments 2 and 3 giving the formula $1 + S\frac{1}{2} + S\frac{1}{N}$. Anterior dorsal cirri (Text-fig. 2 g) are cordate and about as broad as long but become distinctly longer than broad posteriorly. The setigerous lobe is blunt apically with subequal and rounded presetal lips. The ventral cirrus is oval with a pointed tip rather shorter than the setigerous lobe. The setae (Text-fig. 2 h) have oval shaft-heads which are denticulate distally and blades of normal length. Holotype: B.M.(N.H.), Reg. No. 1963.1.13.

Phyllodoce tubicola sp. n.

(Text-fig. 3 a-c)

RECORDS. SCD 200 (1), 232 (1); FAL 397 (1).

DESCRIPTION. The holotype is from station SCD 200 dredged on the Agulhas

Bank at $34^{\circ} 10' S / 23^{\circ} 32' E$. in 97 metres. It is encased in a delicate and transparent tube which is closely ringed. The body is brownish in alcohol without any obvious pattern. It is 30 mm. long and very slender with about 80 segments.

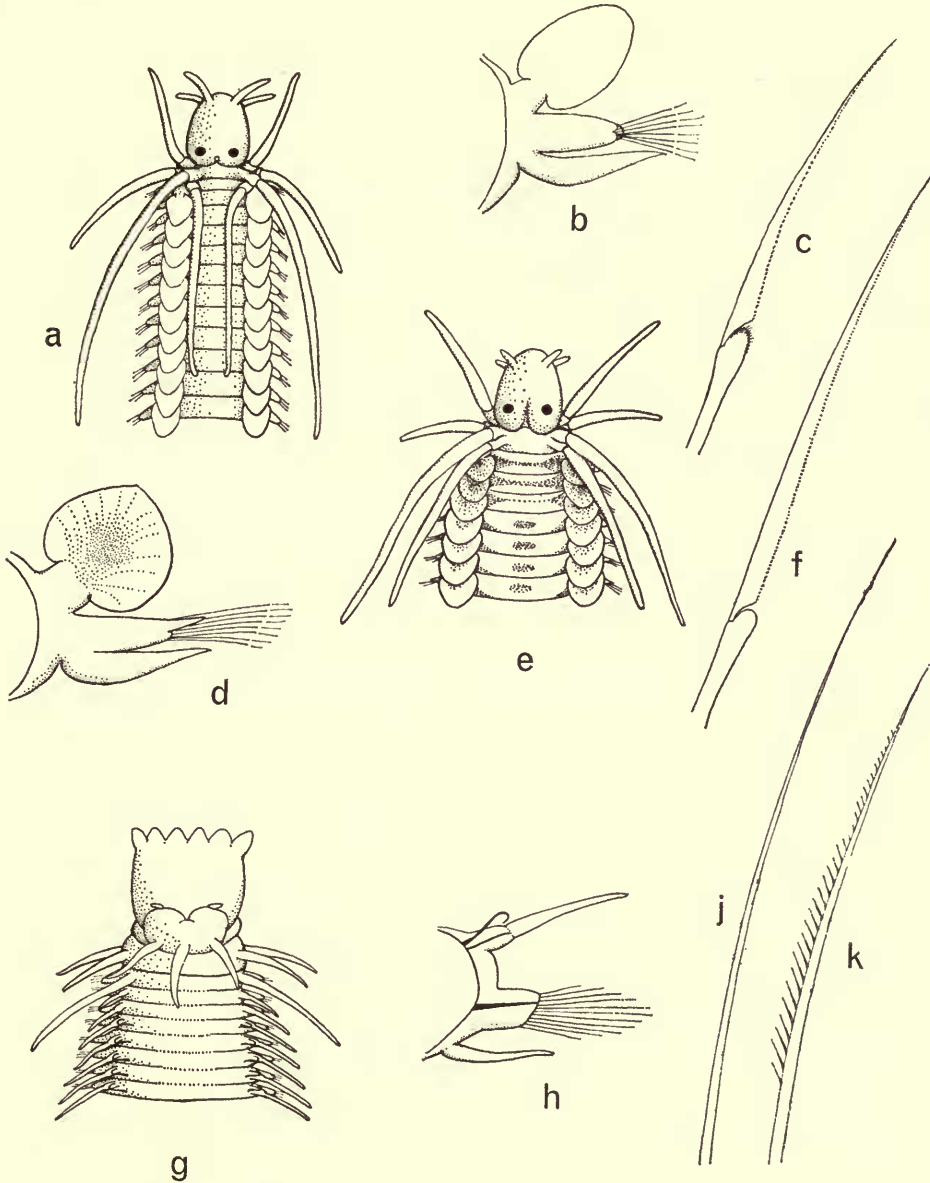


FIG. 3. *Phyllodoce tubicola* : (a) anterior end ; (b) parapodium ; (c) seta. *Phyllodoce longipes* : (d) parapodium ; (e) anterior end ; (f) seta. *Ancistrostylis parva* : (g) anterior end ; (h) parapodium ; (j) long central neuroseta ; (k) short outer neuroseta.

The prostomium (Text-fig. 3 *a*) is oval and longer than broad with a small posterior occipital notch and a minute occipital papilla. The frontal antennae are rather long but the eyes are not enlarged. The proboscis on dissection proved to have small irregular papillae on the basal part, a brown band near the middle and then six rugose ridges distally.

The first tentacular segment is fused to the prostomium and not visible dorsally but the second and third are distinct and separate. The tentacular cirri are all rounded in section and very long, the longest being D_2 which reaches back to setiger 8. Setae are present only on the third tentacular segment, the formula thus being $1 + O_{\frac{1}{2}} + S_{\frac{1}{N}}$.

The dorsal cirri (Text-fig. 3 *b*) are oval to cordate anteriorly but become longer, almost hastate posteriorly. The setigerous lobe is bluntly rounded distally with a notched presetal lip. The ventral cirrus is pointed and obviously longer than the setigerous lobe. Each parapodium bears about 12 setae with oval, striated shaft-heads and long tapering blades (see Text-fig. 3 *c*).

The only other South African species with setae restricted to the third tentacular segment is *P. (Anaites) capensis*, but here the prostomium is partly covered by the fused first and second tentacular segments. Several European species listed by Fauvel, 1923 have the same tentacular formula but differ either in the shape of the prostomium or the character of the proboscis. The genus *Phyllodoce* does not normally live in a tube and it is suspected that the delicate tube in which the holotype (but not the paratypes) was encased may have been a temporary mucous secretion which hardened around the worm during preservation. Holotype: B.M.(N.H.), Reg. No. 1963.1.14.

Phyllodoce (Anaitides) longipes Kinberg, 1865

(Text-fig. 3 *d-f*)

Phyllodoce longipes Kinberg, 1865: 241; Ehlers, 1901: 72, pl. 7, figs. 1-4. (non *Phyllodoce longipes*: Monro, 1930: 73, fig. 21; nec Monro, 1936: 101)

RECORDS. FAL 342 (3).

DESCRIPTION. The largest specimen is 25 mm. long but the last few segments are missing. The anterior end is shown in Text-fig. 3 *e*. The first three segments following those that bear tentacular cirri are dusky, the later ones have three rows of blurred spots. The prostomium is longer than broad with a small posterior notch but no occipital papilla. The proximal half of proboscis has 6 long regular rows of papillae at the sides, and about 14 papillae per row. The distal half has 6 rugose ridges. The first tentacular segment is fused to the prostomium and is not visible dorsally; the second segment is indistinct, but the third segment is distinct and separate. Tentacular cirri are all tapered and rounded in section, the longest being D_2 which is very long. No setae are present on any tentacular segment the formula being $1 + O_{\frac{1}{2}} + O_{\frac{1}{N}}$. The dorsal cirri (Text-fig. 3 *d*) are large and cordate anteriorly but become broader, almost reniform posteriorly. They are dusky, often with a central darker spot. The setigerous lobe has the superior

division of the presetal lip long and pointed and the ventral cirrus has a pointed tip as long as the setigerous lobe. The setae (Text-fig. 3 *f*) have oval striated shaft-heads and serrated tapering blades.

These South African specimens agree very well with Ehlers' description and figures and have the same three characteristically dusky segments following those that bear the tentacular cirri. But Ehlers' account of the tentacular segments is confused and in the text he makes no mention of the fact that the first two segments are fused to the prostomium. Bergstrom (1914, p. 149), who examined Kinberg's type from Valparaiso found it in a poor condition and does not discuss the point, but his text-figure 47 is an excellent illustration of the characteristic parapodium.

Monro's specimens were examined in the British Museum and, as he stated, they have setae in the second and third tentacular segments. The coloration is also different and they obviously belong to a different species. Incidentally there is no aciculum in the dorsal cirrophore.

Family PILARGIDAE

Ancistroyllis parva sp. n.

(Text-fig. 3 *g-k*)

RECORDS. FAL 390 (2); SCD 200 (2).

DESCRIPTION. The holotype is the largest specimen from station SCD 200 dredged at 34° 10' S./23° 32' E. in 97 metres. It measures 10 mm. by 0.7 mm. for 60 segments. The body is rather flattened, tapered posteriorly, and pale in alcohol. There is no narrowed neck region.

The prostomium (Text-fig. 3 *g*) is broader than long without any posterior indentation. A pair of palps with broad flattened palpophores and small palpostyles arise from the anterior margin with a notch between them. There are three tapered antennae each equal to half the width of the peristome but there are no eyes. The proboscis is everted and muscular with 12 marginal papillae; the 8 dorsal ones are stout and conical but the 4 ventral ones are smaller. The peristome bears 2 pairs of tentacular cirri which are the same length as the antennae. The first setiger has a dorsal cirrus which is even longer than the tentacular cirri, a normal setigerous lobe and a ventral cirrus. The second setiger has a rather short dorsal cirrus and a normal setigerous lobe but no ventral cirrus. Subsequent parapodia (Text-fig. 3 *h*) are all essentially similar. The dorsal cirri are smoothly tapered and there is a vague joint between the cirrus and its short stout cirrophore. The setigerous lobe is bluntly truncate and the ventral cirrus is similar to the dorsal one but smaller.

There are no notosetae on the first three setigers. From the fourth onwards a smooth, stout recurved hook arises from the dorsal cirrophore which is thus homologous to a vestigial notopodium. The neurosetae are all simple capillaries. The short outer ones (Text-fig. 3 *k*) have long spinules along one margin but the much longer setae in the centre of the bundle (Text-fig. 3 *j*) have smooth blades.

A. parva is allied to *A. tentaculata* Treadwell 1941 from Long Island Sound, U.S.A. Both are small species with long antennae and dorsal cirri. Both lack a

ventral cirrus on setiger 2 and have notopodial hooks from setiger 4 onwards. But Treadwell figures *A. tentaculata* as having the posterior margin of the prostomium deeply excavate. In *A. parva* the posterior margin of the prostomium is smoothly curved.

Two species of *Ancistrosyllis* have previously been recorded from southern Africa. Ehlers (1908) recorded *A. robusta* from Angola. This is a much larger species with notopodial hooks appearing on setiger 69. Ehlers does not mention whether there is a ventral cirrus on setiger 2 or not. *Ancistrosyllis cf. constricta* described by me (Day, 1957, p. 71) is almost certainly a juvenile. It lacks a ventral cirrus on setiger 2 but the notopodial hooks start on setiger 8 and from setiger 3 onwards there are 1-2 fine notopodial capillaries in all feet. Holotype: B.M.(N.H.) Reg. No. 1963.1.22.

Loandalia capensis sp. n.

(Text-fig. 4 a-d)

RECORDS. SCD 220 (2).

DESCRIPTION. The holotype which was dredged at 34° 02' S./23° 28.4' E. in 49 metres consists of one specimen broken into three pieces with a total of 56 segments measuring 15 mm. The pygidium is missing. There is also a headless fragment of a smaller specimen. The body is rounded in section and about 0.8 mm. broad. The segments are about twice as broad as long though the first few segments are shorter, about 4 times as broad as long. The general appearance is that of a Maldanid for the head appendages are not obvious, the parapodia are very small and there are deep constrictions between the segments.

The head and first three setigers (Text-fig. 4 a) are covered with conical papillae but the rest of the surface is smooth.

The prostomium is small and not clearly separated from the peristomium. It bears a pair of palps with large palpophores and small palpostyles but there are no antennae nor eyes. The proboscis is partly everted and is soft and unarmed. The peristome is clearly separated from setiger 1. Like the other anterior segments it is broader than long and careful examination shows that it bears two pairs of tentacular cirri. These are not much larger than the scattered papillae but quite definite.

The parapodia are inconspicuous throughout. There is a low papilliform notopodial lobe supported by an aciculum but no dorsal cirrus. The neuropodia are a little larger and broadly conical with 2 acicula and a minute ventral cirrus just below the apex. None of the parapodia has any sign of gills.

The first 7 setigers have no notosetae, only an internal aciculum. From setiger 8 onwards each notopodium (Text-fig. 4 b) bears a single stout recurved hook (Text-fig. 4 c) which is granular near the apex. There are no capillaries. The neurosetae (Text-fig. 4 d) are 3-4 capillaries per parapodium. Each has a narrow hairlike blade which is either smooth or very faintly serrated and tapers to a slender tip.

The absence of antennae and the presence of very small tentacular cirri places this species in an intermediate position between *Loandalia* and *Pilargis*. The poorly developed parapodia suggest that it is closer to *Loandalia*.

L. capensis is the fourth recorded species of this rare genus. The other three lack tentacular cirri and *L. aberrans* Monro, 1936 which was recorded from Angola also has gills on the posterior parapodia. Holotype: B.M.(N.H.), Reg. No. 1963.1.25.

Family HESIONIDAE
Oxydromus capensis sp. n.

(Text-fig. 4 e-j)

RECORDS. SCD 200 (1); FAL 390 (1 + 1 juv.); WCD 112 (1), 118 (1).

DESCRIPTION. The holotype was selected from station WCD 112 dredged off Saldanha Bay in 141 metres on dark green mud. It is 5 mm. long for 20 segments but the posterior half is missing and the complete worm was probably double this length. The body is uniformly pale in alcohol.

The prostomium (Text-fig. 4 h) is roughly rectangular and twice as broad as long. The three antennae all arise from the anterior margin and the median is only half the length of the laterals. The biarticulate palps are much stouter than the lateral antennae but not longer. The palpostyle is ovoid and slightly shorter than the palpophore. The prostomium bears two pairs of eyes and the anterior pair are reniform and larger than the posterior pair. The proboscis is muscular and lacks jaws but has 10 conical, widely separated papillae around its margin.

There are 8 pairs of faintly articulated tentacular cirri borne on 4 partially fused segments. The first pair of tentacular cirri are shorter than the rest which are considerably longer than the body is broad.

The first 5-7 segments are uniramous and the rest biramous. The dorsal cirri are mounted on short cirrophores and are smooth and tapered, not annulated. Apart from the first which is equal to three-quarters of the body width, the dorsal cirri are about equal to half the body width. The first few cirrophores have internal acicula but no setae; from setiger 5 onwards a notopodial papilla appears on the ventral side of the cirrophore and by setiger 7 it obviously bears setae. Whether small notosetae are present on setigers 5 and 6 is doubtful. On later parapodia (Text-fig. 4 j) the notopodium is small but quite conspicuous and bears about 10 setae. The neuropodia are always well developed. Each is roughly cylindrical with numerous setae, and bears a triangular presetal lobe, a shorter rounded postsetal lip and a tapered ventral cirrus.

The notosetae include capillaries with smooth flattened blades (Text-fig. 4 f) and 3-4 forked setae (Text-fig. 4 e). The neurosetae (Text-fig. 4 g) are all compound and falcigerous with bidentate blades of varying length. The margin of the blade is minutely serrated and the bidentate apex is formed by a strong terminal tooth and a long slender secondary tooth.

The only record of *Oxydromus* from southern Africa is *Oxydromus* sp. Augener, 1918, p. 225 from Angola. This is incompletely known and possibly has jaws, in which case it belongs to a different genus. *O. capensis* is close to *O. arenicolus* La Greca, 1946 from the Mediterranean and to the subspecies *O. a. glabrus* Hartman, 1961 from California. All three have 10 widely spaced marginal papillae on the proboscis while other species have numerous marginal papillae. However, *O.*

capensis differs from *O. arenicolus* in that the notosetae do not appear before setiger 5 and include both forked setae and capillaries. Forked setae were also reported by Augener for the doubtful *Oxydromus* sp. from Angola. *O. arenicolus* is also said to have annulated dorsal cirri whereas those of *O. capensis* appear to be smooth. Holotype: B.M.(N.H.), Reg. No. 1963.1.28.

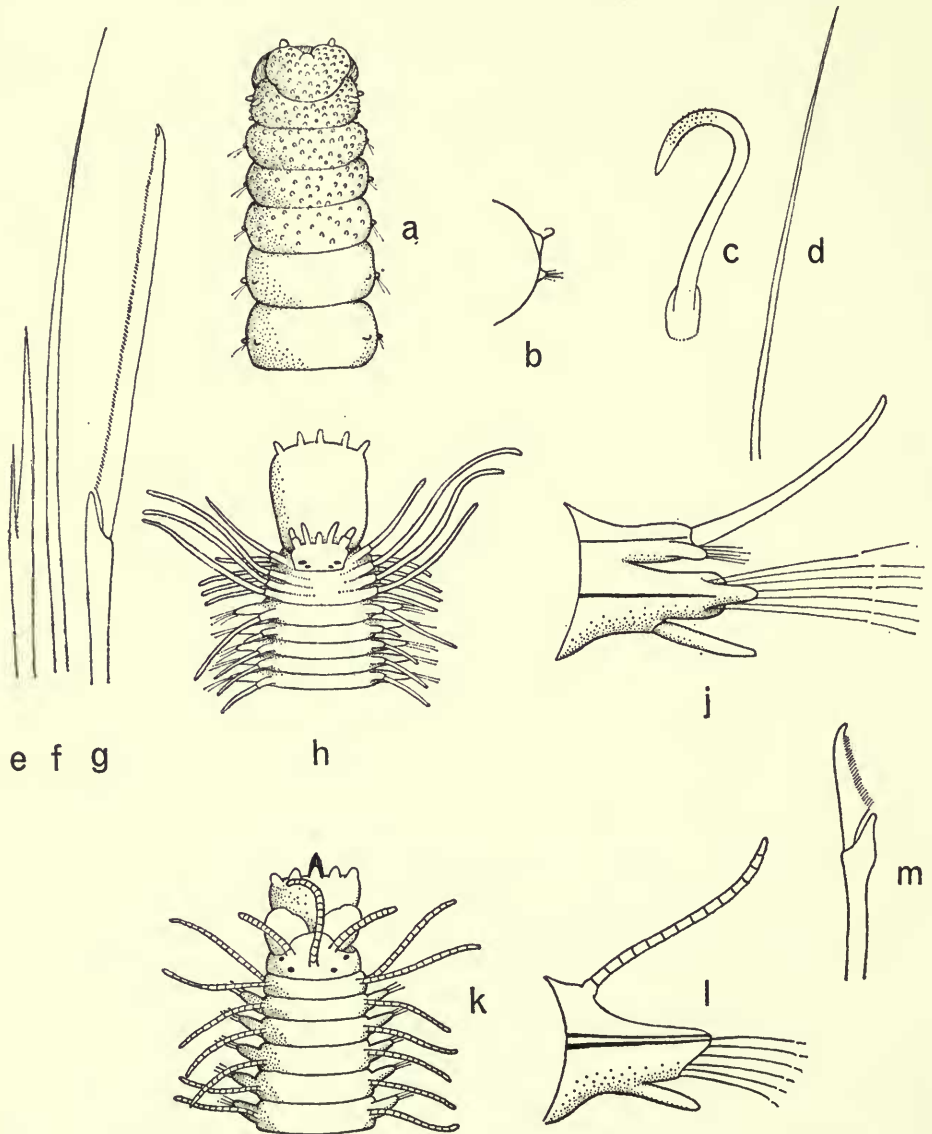


FIG. 4. *Loandalia capensis*: (a) anterior end; (b) 12th parapodium; (c) notopodial hook; (d) neuroseta. *Oxydromus capensis*: (e) notopodial forked seta; (f) notopodial capillary; (g) neuroseta; (h) anterior end; (j) anterior view of parapodium. *Syllis benguellana*: (k) anterior end; (l) parapodium; (m) seta.

Family SYLLIDAE

Syllis benguellana sp. n.(Text-fig. 4 *k-m*)

RECORDS. WCD 91 (ca. 100).

DIAGNOSIS. A threadlike species with slender dorsal cirri having about 15 long joints. Setae unidentate.

DESCRIPTION. Numerous specimens were obtained by a van Veen grab at station WCD 91 at 32° 05.5' S./18° 17.3' E. in 27 metres on white sand. Among them were numerous mature males and ovigerous females. Ten specimens were selected as the types and one of these, a mature male measuring 9 mm. by 0.4 mm. for 90 segments is designated the holotype. The anterior part of the body is colourless but from segment 60 it is swollen and white with sperm.

The proboscis is extruded and shows a small dorsal tooth. The pharynx when retracted would continue back to setiger 9 and the proventriculus which has 35 rows of points is the same length as the pharynx. The prostomium (Text-fig. 4 *k*) is broader than long with 2 pairs of small eyes. The antennae are slender and clearly annulated, the median which is posterior in origin having 14 long joints and the laterals having 12. The palps are broad and separate at the base. There is no occipital flap.The tentacular cirri and dorsal cirri (Text-fig. 4 *l*) are essentially similar, all slender with 12-14 long joints and equal to two-thirds of the segmental breadth. Posterior cirri are shorter and have only 10-12 joints but they are never stout and fusiform as in *S. armillaris*. The ventral cirri are rather long and project beyond the setigerous lobes.There are two knobbed acicula per parapodium and about 6 compound setae. Each of these (Text-fig. 4 *m*) has a straight unidentate blade of normal length. A simple needlelike superior seta appears in the last few feet.This species is obviously close to *S. armillaris* and agrees with it in having unidentate setae. However, the dorsal cirri are quite different, for in contrast to the short fusiform dorsal cirri of *S. armillaris* the cirri of *S. benguellana* are filiform, with 10-14 elongated joints. Holotype: B.M.(N.H.), Reg. No. 1963.1.50.*Eusyllis assimilis* Marenzeller, 1875*Eusyllis assimilis* Marenzeller, 1875: 158; Fauvel, 1923: 294, fig. 112 *a-g*.*Eusyllis monilocornis*: Fauvel 1923*a*: 6.

RECORDS. WCD 41 (1), 87 (1).

NOTES. *E. assimilis* was recorded from southern Angola by Fauvel (1923*a*) under the name of *E. monilicornis*. Fauvel's statement that the bidentate setae have both long and blades shows that his record refers to *E. assimilis* and not *E. blomstrandii*.

This is the first record from South Africa.

Anguillosyllis gen. n.

Prostomium with 3 minute antennae and a pair of large pointed palps fused for half their length. A single pair of minute tentacular cirri. Pharynx straight, unarmed. Dorsal cirri long but not annulated. Ventral cirri present. Setigerous lobe of the parapodium with a contractile dorsal projection.

Setae compound and falcigerous.

TYPE SPECIES. *Anguillosyllis capensis* Day, 1963.

Anguillosyllis capensis sp. n.

(Text-fig. 5 *a-d*)

RECORDS. SCD 275 (2); WCD 106 (1).

DESCRIPTION. The type material consists of two incomplete specimens from station SCD 275 dredged at 34° 51' S./23° 41' E. in 183 metres on fine sand. One is extended and measures 3.5 mm. for 12 segments and the other is contracted and measures 2.5 mm. for 13 segments. The description given below is based on the extended specimen which is designated the holotype.

The head end (Text-fig. 5 *b*) is pointed due to the tapered palps which project well forward and are fused for over half their length. The prostomium is oval and broader than long. There are no eyes but three short club-shaped antennae are present with the median further back than the two laterals and difficult to see. The peristome bears a single pair of lateral tentacular cirri which are rather smaller than the antennae.

The pharynx when dissected proved to be short, broad and straight and reached setiger 3. Careful dissection failed to reveal the dorsal tooth which was expected and the whole pharynx is smooth. The pharyngeal sheath appears to have 6 soft papillae. The proventriculus is barrel-shaped and extends through setigers 4, 5 and 6 and has about 30 rows of points.

The segments and parapodia are similar throughout. Each segment is more than twice as broad as long and each parapodium (Text-fig. 5 *c*) has a long dorsal cirrus, a characteristic setigerous lobe and a slender ventral cirrus. The dorsal cirrus is very long and slender, without any sign of annulation and is usually twisted and coiled. The setigerous lobe is well developed with a dorsal hood over the setae which tapers to a cirriform projection. When retracted (Text-fig. 5 *d*) the dorsal hood is no longer obvious and the end of the setigerous lobe then appears to have three lips; one superior, one anterior and one posterior. The ventral cirrus is slender and arises from the distal end of the setigerous lobe just below the setae.

The setae (Text-fig. 5 *a*) are very numerous and all similar. Each is compound and falcigerous with a rather long, minutely serrated blade and a blunt unidentate tip.

The fusion of the palps and the presence of a single pair of tentacular cirri place this species in the sub-family *Exogoninae*; further the well developed dorsal cirri suggest that it is closer to *Sphaerosyllis* than *Exogone*. But it is obviously distinct

from both these genera. The lack of a dorsal tooth on the pharynx is unusual and the curious dorsal hood over the parapodium is unique. Holotype: B.M.(N.H.) Reg. No. 1963.1.29.

Exogone normalis sp. n.

(Text-fig. 5 e-h)

RECORDS. SCD 130 (3), 212 (2), 215 (1); FAL 419 (3).

DESCRIPTION. The type material consists of three specimens from station SCD 130 obtained by a van Veen grab at 34° 48' S./22° 06' E. in 100 metres on a sandy bottom on 3rd June, 1960. The largest specimen measuring 5.5 mm. by 0.3 mm. for 50 segments is designated the holotype. The paratypes are slightly smaller. All are creamy brown in alcohol.

The palps (Text-fig. 5 g) are large, about three times as long as the prostomium and broader basally. They are completely fused dorsally but broadly grooved ventrally. The prostomium is three times as broad as long with three pairs of large eyes which are coalescent on each side in the holotype but there are only two pairs of small eyes in the two paratypes. The three antennae arise close together on the posterior margin of the prostomium. The median is longer than the prostomium and reaches the base of the palps but the laterals are very small, only one-third the length of the median. The pharynx has a single dorsal tooth and extends back to setiger 5. The proventriculus which is the same length extends on to setiger 10 and has about 23 rows of points.

The tentacular segment is about the same length as the prostomium and quite distinct from it. There is a nuchal organ at the junction between the prostomium and peristomium and the latter bears a single pair of very small tentacular cirri which are only half the size of the first pair of dorsal cirri.

The body is cylindrical and quite smooth. The parapodia (Text-fig. 5 h) are bluntly conical lateral projections. The dorsal cirri are small ovoid papillae well above the parapodia. There is no dorsal cirrus on setiger 2. The ventral cirri are twice the length of the dorsal cirri and project beyond the ends of the parapodia.

Anterior segments bear 12 setae but the number is reduced to about 5 posteriorly. The first 9 segments bear compound setae only, then a superior simple seta appears and finally, in the last few segments an inferior simple seta as well. All the compound setae (Text-fig. 5 f) are similar with moderate shaft-heads and straight unidentate blades of normal length. It is emphasised that there is no specialised superior compound seta. The superior simple seta (Text-fig. 5 e) is a straight blunt needle which gradually increases in thickness until, in posterior segments it is twice the diameter of the compound setae. The inferior seta is the same diameter as the compound seta.

The pygidium bears a pair of anal cirri. Holotype: B.M.(N.H.), Reg. No. 1963.1.30.

Three species of *Exogone* have been recorded from South Africa and there is a very doubtful record of the Antarctic species *E. heterosetosa* from Madagascar. *E. clavator* Ehlers and *E. verugera* Claparède both have dorsal cirri on setiger 2 and

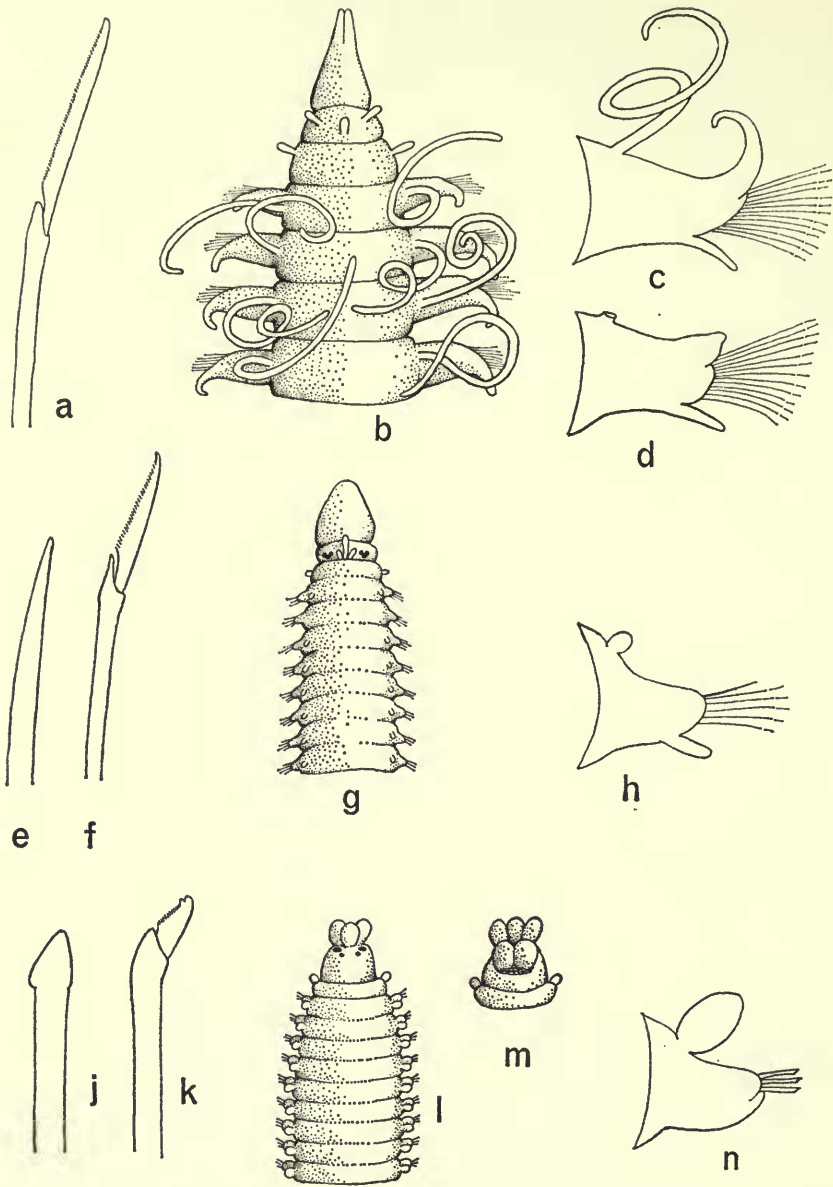


FIG. 5. *Anguillosyllis capensis*: (a) seta; (b) anterior end; (c) expanded parapodium; (d) contracted parapodium with dorsal cirrus omitted. *Exogone normalis*: (e) superior simple seta; (f) compound seta; (g) anterior end; (h) parapodium. *Exogonoides antennata*: (j) simple seta; (k) compound seta from 2nd foot; (l) dorsal view of anterior end; (m) ventral view of head; (n) parapodium.

both have a superior compound seta with a long swordlike blade. *E. heterosetosa* McIntosh and *E. gemmifera* Pagenstecher both lack a dorsal cirrus on setiger 2 and in this respect they agree with *E. normalis* but their setae differ. Their normal

compound setae are bidentate and both have a specialised superior compound seta. In *E. heterosetosa* it has a very swollen shaft-head and a broad triangular blade and in *E. gemmifera* it has a normal shaft-head and a long swordlike blade.

Exogonoides gen. n.

Prostomium with three ovoid frontal antennae. Palps small, ventral, partially fused. Pharynx straight without obvious teeth. Proventriculus poorly developed. A single pair of small tentacular cirri. Dorsal cirri ovoid. Ventral cirri absent (fused to setigerous lobe). Setae compound anteriorly but simple posteriorly.

TYPE SPECIES. *E. antennata* Day, 1963.

Exogonoides antennata sp. n.

(Text-fig. 5 *j-n*)

RECORDS. SCD 246 (2).

DESCRIPTION. The type material was dredged at station SCD 246 at 34° 02' S./23° 28' E. in 49 metres on sand, mud and rock. One of the two specimens has a damaged head. The other, measuring 35 mm. by 0.5 mm. for over 200 segments is designated the holotype. It is creamy brown in alcohol and lacks colour markings. The general appearance is that of a very long *Exogone*, hence the name.

The prostomium (Text-fig. 5 *l*) is bluntly conical with three stout ovoid antennae projecting forward from the anterior end, the median being superior to the two laterals. There are two pairs of eyes of which the anterior pair is larger and wider apart than the posterior pair. The palps (Text-fig. 5 *m*) are small and not visible dorsally. They arise from the antero-ventral margin of the prostomium as two cushion-like lobes in contact with one another. While they are obviously not fused completely it is impossible to say that they are entirely separate and it is presumed that they are partially fused. The pharynx and proventriculus when dissected proved to be slender and attached by mesenteries throughout. Even when the pharynx was removed and cleared, no teeth or trepan was seen and it is thought to be unarmed. The pharynx which extends back to setiger 6 is straight anteriorly but somewhat sinuous where it meets the proventriculus which is small, dark and unusually thin walled. About 15 rows of lumps corresponding to the "points" of a normal gizzard were seen.

The tentacular segment is as long as the body segments and bears a single pair of small ovoid tentacular cirri similar to those found in the genus *Exogone*. There is no sign of a second pair.

The body is very long and slender, anterior segments being about 8 times as broad as long but posterior ones are longer, only twice as broad as long. The body surface is quite smooth.

The parapodia (Text-fig. 5 *n*) are similar throughout. The dorsal cirrus is ovoid in outline, somewhat compressed and about half the size of the setigerous lobe. The setigerous lobe itself is a broad lateral projection with the ventral cirrus completely fused to the postero-ventral margin so that ventral cirri may be said to be

absent as in the *Autolytinae*. The setae are usually three in number and most of them are simple spines with bluntly triangular tips. However, in the first few feet the setae (Text-fig. 5 *k*) bear short, triangular bidentate blades so that the later simple setae (Text-fig. 5 *j*) are obviously homologous with the shafts of the anterior compound forms.

This species cannot be assigned to any known genus. The single tentacular cirrus and short ovoid antennae and cirri are reminiscent of *Exogone* but the latter has completely fused palps projecting forwards, the antennae are dorsal not terminal, and there is a well marked dorsal tooth and distinct ventral cirri. In these respects the present species is related to the *Autolytinae* but the latter has two pairs of tentacular cirri. It is suggested that the subfamily *Autolytinae* be enlarged to include forms with one pair of tentacular cirri and the new genus *Exogonoides* be included in it. Holotype: B.M.(N.H.), Reg. No. 1963.1.34.

Family NEREIDAE

Micronereides gen. n.

Small Nereidae generally similar to *Micronereis* but possessing two antennae. Proboscis without paragnaths but with a pair of toothed jaws. Prostomium with a pair of antennae and a pair of biarticulate palps. Two pairs of tentacular cirri. No apodous segment behind the peristome. First two segments uniramous, subsequent ones biramous. Setae are all homologous spinigers.

TYPE. *Micronereides capensis* Day.

Micronereides capensis sp. n.

(Text-fig. 6 *a-e*)

RECORDS. SCD 233 (1).

The holotype is a single specimen measuring 6 mm. for 34 segments. It was dredged at Station SCD 233 position 36° 28.5' S./21° 11' E. on the Agulhas Bank in 183 metres on a bottom of fine sand. There is no colour pattern. The prostomium (Text-fig. 6 *b*) is broad, almost square with the eyes either indistinct or absent. A pair of widely separated antennae is present. The palps have stout palpophores completely fused to the prostomium and slender palpostyles longer than the antennae. The proboscis lacks paragnaths but has a pair of large jaws with 7 teeth. There are two pairs of short tentacular cirri arranged 2 : 2 showing that they have been derived from two fused segments. There is no anterior apodous segment. The first two setigerous segments are uniramous, the notopodial lobes and notosetae being absent though the dorsal cirrus remains. Subsequent segments have biramous parapodia which are similar in structure throughout. The pygidium is unknown.

Normal parapodia (Text-fig. 6 *c*) are deeply cleft between the notopodia and neuropodia. The dorsal cirrus is rather short and the superior lobe of the notopodium is absent. The inferior lobe of the notopodium however, is elongated and

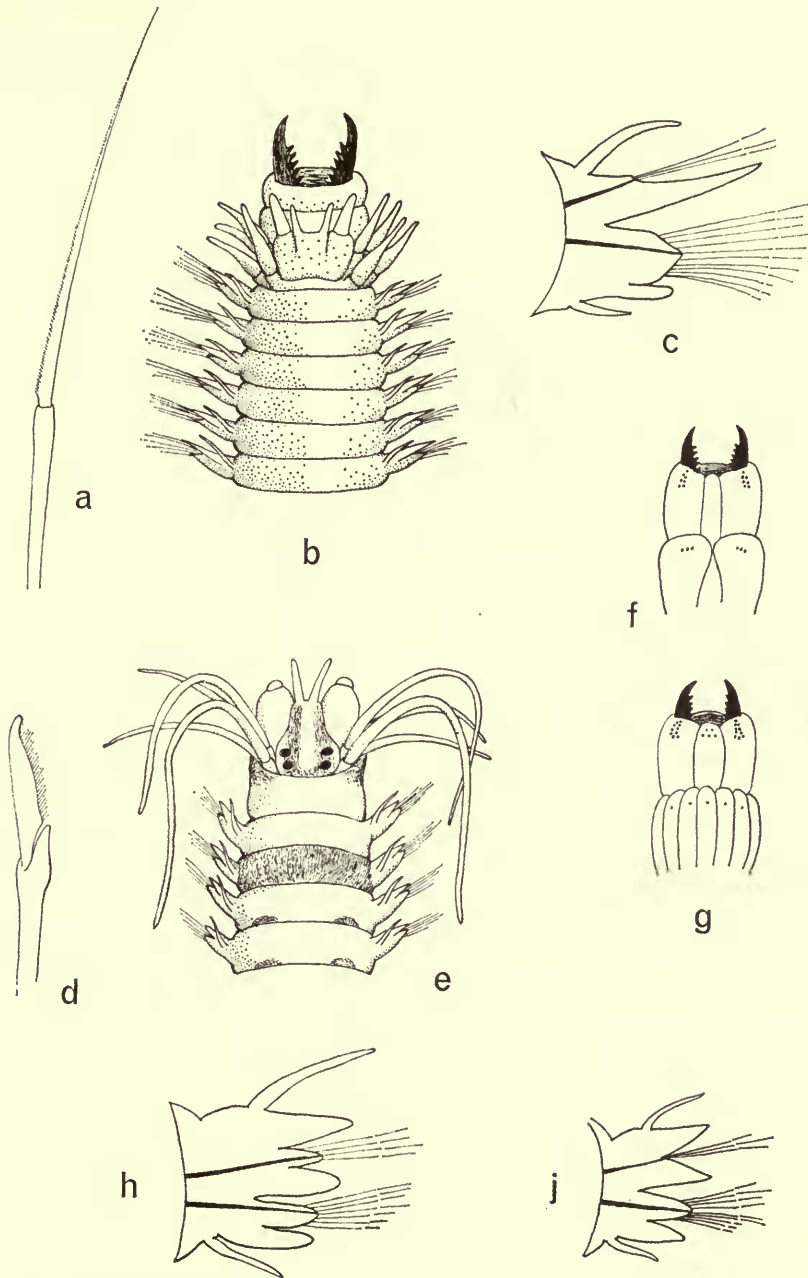


FIG. 6. *Micronereides capensis*: (a) seta; (b) anterior end; (c) parapodium. *Nereis* (*Neanthes*) *agulhana*: (d) falcigerous neuroseta; (e) anterior end; (f) dorsal view of proboscis; (g) ventral view of proboscis; (h) roth foot; (j) posterior foot.

exceeds the dorsal cirrus. There is no intermediate (setigerous) lobe. The neuropodium consists of a stout, conical setigerous lobe, a very small inferior lobe and a small ventral cirrus.

The setae (Text-fig. 6 *a*) are all homogomph spinigers though the inferior series in the neuropodia have rather short blades and the shaft-heads might be considered hemigomph.

REMARKS. The new genus *Micronereides* is obviously close to *Micronereis* Claparède, 1863 in which Hartman (1959) recognised three species, *M. halei* Hartman, 1954 from South Australia, *M. nanaimoensis* Berkeley and Berkeley, 1953 from Western Canada and *M. variegata* Claparède, 1863 from France.

I have not seen a description of *M. nanaimoensis* but the other two species both lack antennae and it would seem unwise to enlarge the generic description of the well established genus *Micronereis* to include forms with two antennae. Holotype: B.M.(N.H.), Reg. No. 1963.1.60.

Nereis (Neanthes) agulhana sp. n.

(Text-fig. 6 *d-j*)

Nereis (Neanthes) cf. *kerгуelensis*: Day, 1960: 321.

RECORDS. SCD 156 (3), 182 (4), 207 (6 juvs.), 237 (1 juv.), 246 (1).

The holotype is a specimen measuring 20 mm. with 65 segments selected from the material dredged at station SCD 156 at 34° 03' S./25° 59' E. in 84 metres on a rocky bottom. The colour in alcohol is pale with touches of brown on the prostomium, a well marked and characteristic bar across the dorsum of setiger 2 and a pair of small spots on each of the succeeding anterior segments (see Text-fig. 6 *e*).

The antennae and tentacular cirri are rather long and slender and the prostomium itself is longer than broad.

The proboscis (Text-figs. 4 *f* and *g*) has group I = 0; II = 8-9 in a double row; III = a group of 5-6; IV = a wedge of 8-12; V = 0; VI = 2-4 close-set points in a transverse line; VII and VIII = a single row of 3-5.

Anterior feet (Text-fig. 6 *h*) have pointed lobes and slightly longer dorsal cirri. The notopodium has three lobes, the middle lobe bearing the notosetae being well marked but obviously smaller than the other two. The setigerous lobe of the neuropodium has no projecting presetal or postsetal lips.

In posterior feet (Text-fig. 6 *j*) the dorsal cirrus is rather smaller and the notopodium has lost its third or setigerous lobe. The two notopodial lobes that remain are stout, markedly pointed and divergent. The structure of the neuropodium is the same as in the anterior feet.

The notosetae are homogomph spinigers throughout, there being no notopodial falcigers. The neurosetae include the normal series of homogomph and heterogomph spinigers and heterogomph falcigers. The latter (Text-fig. 6 *d*) have rather straight blades with a tendon attached to the blunt tip.

This species is close to *N. kerguelensis* McIntosh, 1885 which has now been reported from many parts of the world including the Mediterranean. However an examination of McIntosh's type in the British Museum (Reg. No. 1885: 12: 1: 170) and

other specimens identified as *N. kerguelensis* from sub-antarctic localities by Monro, 1930 shows that the South African material is distinct.

In the type of *N. kerguelensis* the proboscis has group I with 2 points in line, V = 0, VI a single small point and VII and VIII a row of 5 points. The prostomium is broad, almost oval, and the colour of the body is uniformly pale. In anterior feet the third (setigerous) lobe of the notopodium is small and the setigerous lobe of the neuropodium has a prominent, almost digitiform postsetal lip. This is not shown in McIntosh's pl. 35, fig. 11 but it is quite distinct in the type, and is referred to by Monro, 1930. Holotype: B.M.(N.H.), Reg. No. 1963.1.61.

In brief the important differences between *N. agulhana* which is apparently common in deep water dredgings around South Africa and the sub-antarctic *N. kerguelensis* concern the distribution of paragnaths, the presence of a brown bar across setiger 2 which is present in every specimen of *N. agulhana*, the structure of the setigerous lobe of the neuropodium and according to Ramsay (1914) and Monro (1936) the lack of heterogomph spinigers in the neuropodia of *N. kerguelensis*.

N. papillosa Day 1963 has a similar arrangement of paragnaths but is immediately separated by the presence of papillae on the parapodial lobes of middle feet.

Family SPHAERODORIDAE

Sphaerodorum benguellarum sp. n.

(Text-fig. 7 a-c)

RECORDS. WCD 110 (1).

DESCRIPTION. The type locality is 32° 08' S./17° 39' E. in 172 metres. The single specimen (Text-fig. 7 b) is ovoid, 2.2 mm. long by 0.8 mm. broad with 24 segments. The head is retracted and its appendages are not visible, but a pair of dark eyes was seen on clearing with glycerine. There is a large muscular gizzard. The whole body is covered with papillae. Each segment has an anterior row of 8 large papillae across the dorsum and a posterior, more irregular row of about 20 small papillae. The papillae above and below the parapodia are not larger than the rest. The parapodia themselves (Text-fig. 7 c) are wrinkled and obviously retractile. Each is conical in shape with a large presetal papilla, about 12 setae and two smaller postsetal papillae.

The setae (Text-fig. 7 a) are all compound, each with a swollen shaft-head and a long tapered falcigerous blade. The tip is minute but probably unidentate. Holotype: B.M.(N.H.), Reg. No. 1963.1.75.

Sphaerodorum capense sp. n.

(Text-fig. 7 d-f)

RECORDS. CP 452—1 specimen found among *Gunnarea* tubes on the shore at Mouillé Point, Cape Town on 1st October, 1955.

DESCRIPTION. The holotype (Text-fig. 7 d) is ovoid in shape 2.5 mm. long, 0.8 mm. wide and has 16 setigers. The colour is yellowish, with a pair of black eyes

and the dark contents of the gut showing through the skin. The head is retracted and its appendages are indistinguishable from the numerous spherical papillae which cover the whole surface.

Each body segment has two transverse rows of papillae across the dorsum. The anterior row consists of about 18 larger papillae and the posterior irregular row has many more smaller ones about half the size of those in the anterior row. The papillae above the parapodia are not obviously enlarged as in *S. gracile*. The parapodia (Text-fig. 7 *f*) are small, obviously retractile and covered with papillae with a larger one apically. There are about 10 long setae per parapodium. Each seta (Text-fig. 7 *e*) is compound with a broad oval shaft-head and an indistinctly separated blade ending in a small, hooked unidentate tip. *S. capense* may be distinguished from other species of the genus by the characteristic setae and the distribution of the papillae. Holotype: B.M.(N.H.), Reg. No. 1963.1.74.

Family GLYCERIDAE

Goniadella gracilis (Verrill, 1873)

Eone gracilis Verrill, 1873: 596.

Goniadella gracilis: Hartman, 1950: 42, pl. 5, figs. 4-8.

RECORDS. FAL 413 (3); SCD 212 (1), 218 (6), 237 (2), 245 (1), 275 (3), 288 (1).

NOTES. This small threadlike species which averages 10-15 mm. in length seems to be common in grab samples around the Cape. The genus *Goniadella* is close to *Goniada* but may be distinguished by the possession of both falcigerous and spinigerous neurosetae instead of spinigers alone. *G. gracilis* (Verrill) is the only species known and the long digitiform presetal lip on the neuropodium is characteristic. The South African specimens differ from Hartman's description only in a few minor points. The proboscis has about 30 chevrons at its base, instead of 25, no eyes were found on the terminal ring of the prostomium, only on the basal one and there are fewer notosetae in posterior segments.

Family EUNICIDAE

Subfamily EUNICINAE

Marphysa purcellana Willey, 1904

Marphysa purcellana Willey, 1904: 263, pl. 13, fig. 17; Day, 1953: 435.

RECORDS. Seven specimens obtained by a dredger prospecting for diamonds north of the Orange River mouth in about 5-10 fathoms.

NOTES. This is a new record for South West Africa.

Subfamily ONUPHIDINAE

Diopatra dubia Day, 1960

Diopatra dubia Day, 1960: 348, fig. 10 *g-k*.

RECORDS. SCD 288 (1)

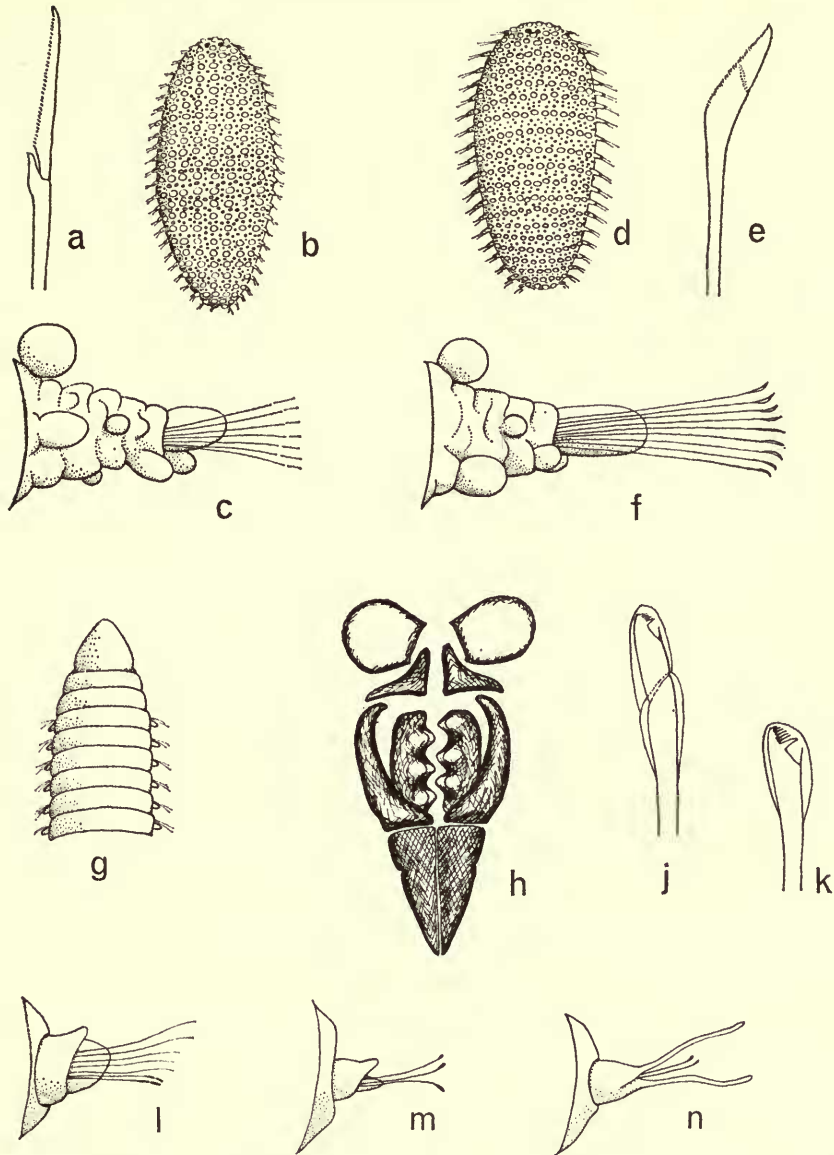


FIG. 7. *Sphaerodorum capense*: (a) seta; (b) entire worm; (c) parapodium. *Sphaerodorum benguellarum*: (d) entire worm; (e) seta; (f) parapodium. *Lumbrineris meteorana*: (g) anterior end; (h) maxillae (j) compound hook; (k) simple hook; (l) anterior view of 6th foot; (m) anterior view of 50th foot; (n) anterior view of far posterior foot.

NOTES. Although this species seems to be widely distributed on the Atlantic coast of South Africa and is fairly common in False Bay, this record extends its range to the Indian Ocean off East London.

***Onuphis quinquedens* Day, 1951**

Onuphis quinquedens Day, 1951 : 40, fig. 6 a-h.

RECORDS. Muizenberg beach (locally common).

NOTES. This species has not been seen since its original discovery in Zululand. The new record extends its known range to False Bay. It is apparently common in a small area at the sheltered western end of Muizenberg bathing beach where it burrows in sand near low tide. The new specimens are much larger than the holotype and reach a length of 350 mm. by 8 mm. The notch between the tentacular cirri is distinctive.

Subfamily LUMBRINERINAE

***Lumbrineris heteropoda difficilis* nom. nov.**

Lumbrineris heteropoda difficilis nom. nov. pro *Lumbrineris heteropoda* var. *atlantica* (non *Lumbriconereis atlantica* Kinberg, 1865 : 568 ; Fauvel 1934 : 27) Day, 1960 : 360, fig. 12 c-d. *Lumbriconereis heteropoda* : Monro, 1930 : 137 ; Monro, 1936 : 154.

RECORDS. WCD 90 (2 + 2 juvs.), 94 (2 + 3 juvs.), 103 (12), 121 (2).

NOTES. This subspecies differs from *L. heteropoda* in the extreme length of the posterior feet and the possession of dark acicula. Its relationship to *L. h. heteropoda* has been discussed by me (Day, 1957, 1960) under the name *L. heteropoda* var. *atlantica*. Hartman (1959) showed that the name *atlantica* has been used both by Kinberg, 1865 and Fauvel, 1934 so that these South African specimens must be renamed.

***Lumbrineris meteorana* (Augener, 1931)**

(Text-fig. 7 g-n)

Lumbriconereis meteorana Augener, 1931 : 300, fig. 8 a-e (partim).

Lumbrineris cf. *meteorana* : Day 1960, p. 358.

RECORDS. WCD 60 (4), 61 (5), 63 (28), 64 (11), 66 (8), 67 (1), 97 (3), 109 (13), 112 (3 + 10 juvs.), 115 (1 + 3 juvs.); FAL 390 (43); SCD 185 (1), 187 (15), 193 (4), 197 (13), 200 (14), 214 (3 juvs.).

DESCRIPTION. The abundant material now available has confirmed the suspicion expressed by me (Day, 1960) that the two fragments described by Augener (1931) do not belong to the same species. I suggest that the name *L. meteorana* should be restricted to the posterior fragment with its characteristically long filamentous parapodial lobes. A summarised description of a complete specimen from station WCD 60 is given below.

Body slender, about 20 mm. long by 0.8 mm. broad with 120 segments. Yellowish white in alcohol. Prostomium (Text-fig. 7 g) bluntly conical. Mandibles weak, and poorly calcified with shafts in contact throughout their length. Maxillary formula : I = 1 + 1 ; II = 3 + 3 ; III = ?1 + ?1 ; IV = 1 + 1. The maxillary supports (Text-fig. 7 h) are broadly triangular, the main fangs (Mx. I) are weakly

chitinised and blunt, each of the main dental plates (Mx. II) has three blunt bilobed teeth, Mx. III are cutting plates with a sharp edge but no definite tooth while Mx. IV are large and rounded, each with pale centre and a dark edge on which there is an indistinct tooth.

Anterior feet (Text-fig. 7 *l*) have rather flattened lobes, the low presetal one being more developed superiorly while the larger postsetal one is compressed and bluntly rounded. In the middle feet (Text-fig. 7 *m*) the two lobes are both small and subequal. This condition persists over most of the body but near the posterior end the two parapodial lobes (Text-fig. 7 *n*) elongate and become filamentous; as always the presetal one is slightly more superior than the postsetal.

The acicula are pale in all feet. Anterior setae include about 4 winged capillaries and 2 compound hooks. The hooks are compound (Text-fig. 7 *j*) for the first 10-15 feet but then become simple with short hoods and unusually long teeth (see Text-fig. 7 *k*). One or two such hooks persist to the end of the body.

The capillaries decrease in number after the first few feet and disappear before the middle of the body.

This species differs from *L. bifilaris* Ehlers in the structure of the maxillae and in the possession of jointed hooks anteriorly. In both characters it is close to *L. albidentata* but the posterior feet are quite different and the mandibular shafts are in contact throughout, not widely divergent as in *L. albidentata*.

Lumbrineris aberrans sp. n.

(Text-fig. 8 *a-f*)

RECORDS. SCD 212 (1).

DESCRIPTION. The type locality is 33° 58.8' S./25° 42.2' E. in 26 metres. The single specimen is 6 mm. long with 38 setigers but is incomplete posteriorly. The anterior end however is quite characteristic.

The prostomium (Text-fig. 8 *a*) is enormously elongated, conical and about as long as the combined length of the first two apodous segments plus the first four setigers. The mandibles (Text-fig. 8 *c*) are small and lightly chitinised. The maxillary supports (Text-fig. 8 *b*) are very long and triangular and the maxillary formula is Mx. I = 1 + 1; II = 3 + 3; III ?1 + ?1 (short plates with one indistinct tooth); IV = 0 + 0 (oval plates without teeth).

The first two apodous segments are short and the first few setigerous segments that follow have such small parapodial lobes that the setae appear to arise from the sides of the segments. The first well formed parapodium is on setiger 7 and from there on the parapodial lobes increase in size though they are never large. Within the 38 setigers investigated all the parapodia (Text-fig. 8 *e*) are essentially similar in shape. Each has a low rounded presetal lobe and a small digitiform postsetal lobe always shorter than the setae. There are 4-6 setae per parapodium. Capillaries appear in the first setiger and simple hooks in the fourth. The first few capillaries have very short broad blades but they become longer and more tapered posteriorly (see Text-fig. 8 *d*). The hooks (Text-fig. 8 *f*) have short broad hoods and are distinctive in having only two stout teeth instead of the usual series of one large and several small ones. The acicula are pale.

This species is obviously related to *L. acuta* Verrill, 1875 from Rhode Island, U.S.A. and *L. mucronata* Ehlers, 1908 from the mouth of the Congo. The former lacks hooks but the latter is closer for it also has bidentate hooks. However, in *L. mucronata* the prostomium is relatively shorter, the maxillary supports narrower and maxillary formula is different. Ehlers was only able to see the maxillae by transparency in a cleared preparation but he figures Mx. II with 6 teeth and Mx. IV with about 8 small ones. Both of these features are unusual and dissection may show that Ehlers' interpretation was inaccurate. If so, *L. aberrans* may prove to be a synonym of *L. mucronata*. Holotype: B.M.(N.H.), Reg. No. 1963.1.86.

Subfamily ARABELLINAE

Drilonereis falcata Moore, 1911

Drilonereis falcata Moore, 1911: 298; Day, 1960: 364, fig. 13 a-e.

RECORDS. One specimen obtained by a dredger prospecting for diamonds north of the Orange River mouth in 5-10 fathoms.

NOTES. This is a new record for South West Africa.

Subfamily DORVILLEINAE

Protodorvillea egena (Ehlers, 1913)

Stauronereis egena Ehlers, 1913: 501, pl. 35, figs. 1-6.

Non *Stauronereis egena*: Augener, 1918: 377, pl. 5, figs. 102-103, fig. 45.

Dorvillea egena Day, 1960: 371.

Protodorvillea egena Pettibone, 1961: 180.

RECORDS. FAL 284 (1).

NOTES. The discovery of a specimen from the type locality (False Bay) allows me to confirm Ehlers' description apart from minor points. The present specimen is 5.0 mm. long and thus slightly larger than the 4.5 mm. holotype. Only the second large pair of eyes is visible, not the anterior minute pair. As stated by Ehlers the short antennae consist of a single club-shaped joint, there is no dorsal cirrus on setiger 1 but small ovoid dorsal cirri without cirrophores or internal acicula are present on all subsequent feet. The presetal lobe projects well beyond the postsetal one. The superior simple setae include 1-2 forked setae with subequal prongs and smooth shafts and 1-2 capillaries which appear smooth under low power but are actually faintly serrate at the base of the blade. The inferior compound setae number 3-4 per bundle. The blades vary in length, some being as long as that figured by Ehlers (pl. 35, fig. 4) but others much shorter. They are all falcigerous and under high power it may be seen that the tip is minutely bidentate.

Augener's specimens from South West Africa were considerably larger (9-16 mm.) with multi-articulate antennae, the dorsal cirri are reported to be mounted on cirrophores and the forked setae are shown (Text-fig. 45 a) as having unequal prongs and serrations on one side of the shaft-head.

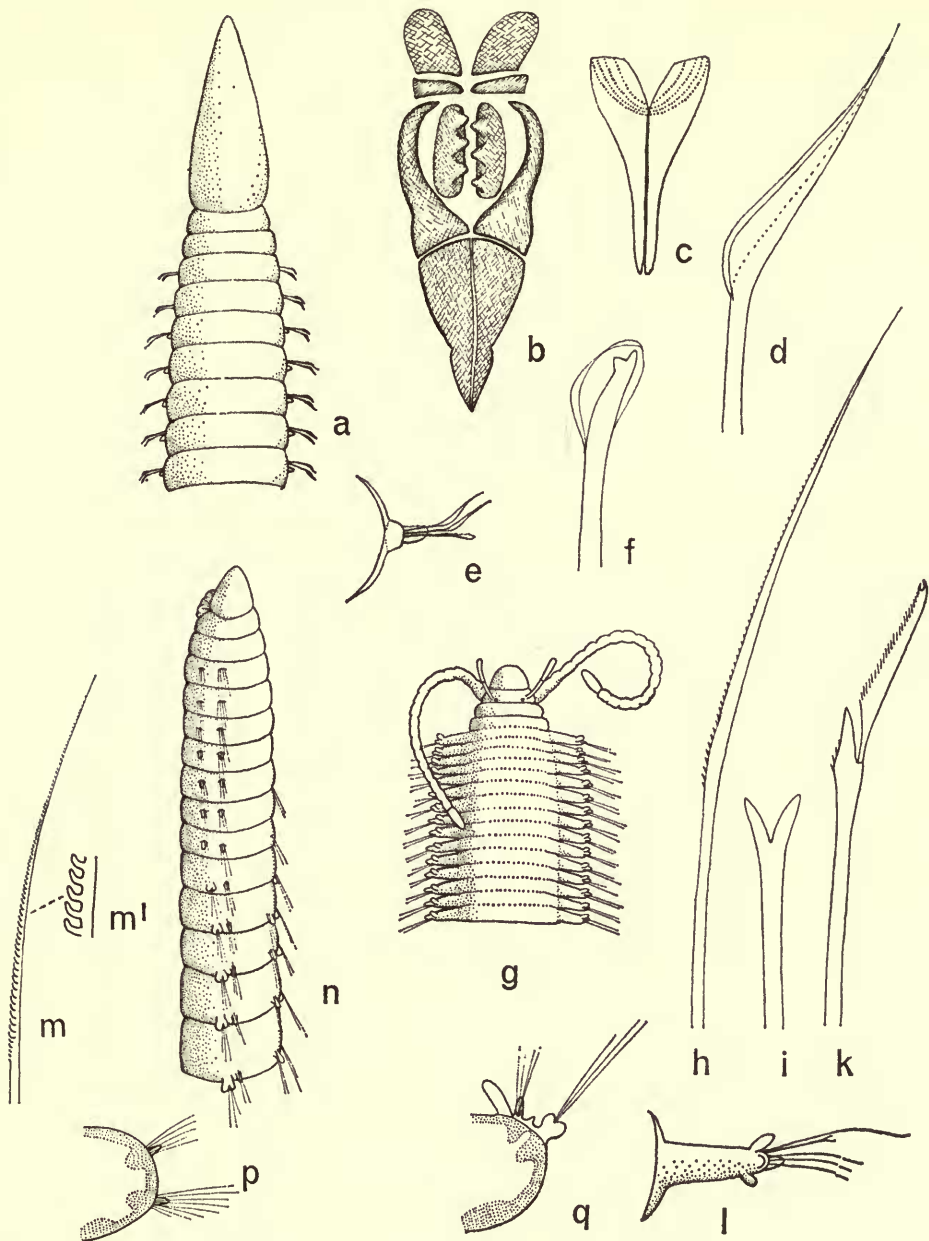


FIG. 8. *Lumbrineris aberrans*: (a) anterior end; (b) maxillae; (c) mandibles; (d) capillary seta from 20th foot; (e) anterior parapodium; (f) hook. *Protodorvillea biarticulata*: (g) anterior end; (h) superior capillary seta; (i) forked seta; (j) compound seta; (k) posterior view of parapodium. *Scoloplella capensis*: (m, m') thoracic neuroseta and details of crenulations; (n) dorso-lateral view of head and first twelve setigers; (p) 6th foot; (q) 24th foot.

Protodorvillea biarticulata sp. n.

(Text-fig. 8 g-l)

RECORDS. SCD 140 (2), 213 (3).

DESCRIPTION. The holotype is a complete specimen measuring 4.0 mm. by 0.3 mm. for 100 segments. It was obtained by grab from station SCD 140 at 34° 35' S./21° 56' E. in 78 metres on a bottom of broken shell. The specimen is colourless in alcohol.

The two-ringed prostomium (Text-fig. 8 g) is smoothly ovoid anteriorly and has a single pair of posterior eyes. The palps are long and coiled with irregularly annulated or wrinkled palpophores and rather long oval palpostyles. They reach back to setiger 10. The antennae are a little shorter than the length of the prostomium and are biarticulate with two long joints. The mandibles and maxillae were not clearly seen but appear to be normal. There are two apodous segments behind the prostomium.

The body is somewhat flattened and consists of 100 short segments each about 8 times broader than long. The parapodia (Text-fig. 8 l) are relatively large. They are the same width as the segments and extend outwards for a distance equal to half the body width. Each one, including the first is provided with a small ovoid dorsal cirrus without a cirrophore or internal aciculum. The setigerous lobe has a blunt projecting presetal lobe longer than the dorsal cirrus, a very short postsetal lobe or lip and a ventral cirrus similar to the dorsal one.

There are 5-6 setae. Superiorly there is a forked seta and a simple capillary and inferiorly there are 3-4 compound setae. The forked seta (Text-fig. 8 j) has a smooth shaft-head and subequal prongs which are flanged but not serrated on their inner margins. The capillary seta (Text-fig. 8 h) has a narrow blade serrated basally, while the compound setae (Text-fig. 8 k) are falcigerous with shaft-heads which are minutely serrated on one side and blades which vary in length and end in minutely bidentate tips.

The pygidium bears two pairs of long cylindrical anal cirri.

Pettibone (1961) has recently revised the Dorvilleidae in which she recognises five genera. Her new genus *Protodorvillea* resembles *Ophryotrocha* in having uniramous parapodia and lacking dorsal cirrophores but may be distinguished from it by the characters of the jaws, and by the possession of longer jointed palps and forked setae. According to her species key the present species is most closely related to *P. kefersteini* (McIntosh) and *P. gracilis* (Hartman) and may be distinguished from *P. egena* (Ehlers) by the presence of dorsal cirri on the first setiger and (one might add) the possession of two-jointed antennae. *P. gracilis* (Hartman, 1938) from California has single-jointed antennae and the pre- and postsetal lobes of the parapodia are very short and subequal. *P. kefersteini* (McIntosh, 1869) from Europe as re-described by Fauvel, 1923 is a larger species up to 15 mm. long with possibly 4 indistinct annulations on the antennae and broad, subequal pre- and postsetal lobes to the parapodia. Holotype: B.M.(N.H.), Reg. No. 1963.1.87.

***Ophryotrocha puerilis* Clap. & Mecz., 1869**

Ophryotrocha puerilis Claparède & Mecznirow, 1869: 184; Fauvel, 1923: 450, fig. 180 a-h; Hartman, 1944: 191, pl. 15, figs. 325-330.

RECORDS. Specimens numerous in aquaria in Cape Town in June and August, 1962.

NOTES. The specimens are quite typical. Dissection of the maxillae showed that there are 7 pairs of small dentate elements attached to a pair of chitinous strands leading back to the main fangs. The 3 proximal pairs are dark and have about 5 teeth of decreasing size and the 4 distal pairs are pale and have about 12 minute subequal teeth. These are used in the same way as a radula to scrape off attached diatoms which fill the gut. Specimens were found breeding in August. This is the first record of this cosmopolitan species from South Africa.

Family **ORBINIIDAE**Subfamily **PROTOARCIINAE*****Scolopella* gen. n.**

Small *Oribiniidae* belonging to the sub-family *Protoariciinae* with two achaetous segments following the prostomium. Thoracic region with few segments. Thoracic setae are crenulate capillaries in both rami. Abdominal region with both notopodial and neuropodial lobes bearing capillary seta. No specialised setae. Branchiae restricted to the abdominal segments.

TYPE SPECIES. *Scolopella capensis* Day.

***Scolopella capensis* sp. n.**

(Text-fig. 8 m-q)

RECORDS. WCD 79 (2), 116 (3); SCD 237 (2).

DESCRIPTION. The type material comes from station WCD 116 at 33° 06.5' S./17° 32.9' E. in 183 metres on a bottom of dark green mud. There are two incomplete specimens. The holotype measures 15 mm. by 0.3 mm. for 48 segments while the paratype measures 8 mm. for 25 segments. All are rounded in section and quite pale in alcohol.

The prostomium (Text-fig. 8 n) is bluntly conical and lacks eyes. The proboscis is retracted so that it is not possible to say whether its distal end is lobed or smooth.

The body is roughly cylindrical in section without any obvious flattening of the anterior region. The first 9 segments are about three times as broad as long but later ones rapidly increase in length; the 20th setiger is about as long as broad, and the 30th is 4 times longer than broad.

The first two segments behind the mouth lack parapodia or setae. They are well marked and there is no possibility that this is really a single biannulate segment.

Setigers 1-7 (segments 3-9) bear two bundles of crenulate capillaries arising directly from the sides of the body (see Text-fig. 8 p). Minute postsetal papillae

are present behind the notosetae and neurosetae from setiger 4 to 7 and on one of the paratypes the notopodial papilla may be traced forwards to setiger 1. Thus the thorax consists of 2 apodous segments and 7 setigers.

The change from thorax to abdomen is marked by the appearance of a bilobed neuropodial projection on setiger 8 (segment 10), the movement of the neuropodium from a lateral to a dorso-lateral position and the gradual lengthening of the segments. The abdominal parapodia (Text-fig. 8 *q*) are very simple. The notopodium consists of a small digitiform postsetal lobe and the neuropodium a stout bilobed projection from which the setae arise. The first pair of gills were only found on setiger 20 of the holotype and on setiger 24 on one of the paratypes. A conical papilla representing the intermediate cirrus appeared two segments later. There was no sign of a ventral cirrus. Thus the whole of the thoracic region and the anterior abdominal segments lack gills.

All the setae are simple crenulate capillaries and no specialised setae were found. The thoracic setae (Text-fig. 8 *m*, *m'*) both in the notopodium and the neuropodium are more numerous than those of the abdomen and their blades are rather stouter and the crenulations better marked. The abdominal notosetae are rather shorter than those on the thorax but the neurosetae are twice as long. There are only 2-3 of them and they are very smooth. The crenulations if present at all must be very poorly marked.

When first examined it was thought that these specimens belonged to the genus *Haploscoloplos*, but the presence of two anterior achaetous segments shows that they belonged to the new subfamily *Protoariciinae* erected by Hartman, 1957. This contains three genera, *Orbiniella*, *Protoaricia* and *Proscoloplos*. *Orbiniella* lacks gills and parapodial projections; *Protoaricia* has uncini and subuluncini in some thoracic neuropodia; *Proscoloplos* has swan-shaped hooks in the abdominal neuropodia. Thus these South African specimens must be referred to a new genus for which the name *Scoloplella* is proposed. Holotype: B.M.(N.H.), Reg. No. 1963.1.91.

Haploscoloplos cf. *fragilis* (Verrill, 1873)

Anthostoma fragile Verrill, 1873: 598.

Hoploscoloplos fragilis: Hartman, 1957: 271, pl. 25, figs. 1-3.

RECORDS. SCD 223 (2 + 1 juv.).

NOTES. The three specimens are incomplete and rather damaged. The thorax consists of 15-16 setigerous segments sharply marked off from the abdomen by the change in the neuropodia. The setae are crenulate capillaries in both rami throughout the body, there being no hooks in thoracic neuropodia. In the thorax all the notopodia have well developed postsetal lobes which are somewhat flattened. Anterior neuropodia have a similar postsetal lobe (or foot papilla) behind the middle of the setal fascicle but on the last two thoracic segments there are 3 postsetal lobes. These all continue into the abdomen, the superior one becoming a neuropodial lobe and the two inferior ones becoming ventral cirri. This condition persists for 4 or 5 segments and then one papilla disappears leaving only a single small cirrus below the bilobed neuropodium. The abdominal notopodium has a slender

tapered postsetal lobe. There is also an interramal cirrus which appears on the last thoracic segment and gradually decreases in size on later abdominal segments. Branchiae appear on setigers 14-15, i.e. the penultimate thoracic segment. They are well developed and larger than the abdominal notopodia.

The possession of an interramal cirrus and ventral cirri immediately distinguish these specimens from *H. kerguelensis*. They agree in the main with Hartman's description of *H. fragilis* but differ in the number of thoracic setigers (setiger 15-16 vs. 17-23) and the origin of the gills (setiger 14-15 vs. 17-21 or 30). More material is required to determine how variable these characters are.

Family SPIONIDAE

Polydora maculata sp. n.

(Text-fig. 9 a-d)

RECORDS. SCD 284 (7).

DESCRIPTION. The type material was dredged at station SCD 284 at 33° 01' S./27° 55' E. in 7 metres. The specimens were extracted from burrows in an old *Bullia laevissima* shell inhabited by a hermit crab. A complete specimen chosen as the holotype measures 20 mm. by 1.0 mm. for 130 segments. The body is flesh pink apart from the palps which are barred with black.

The prostomium (Text-fig. 9 a) is faintly bilobed anteriorly and continues back as a median ridge reaching setiger 2. There are 4 eyes. Between the bases of the palps the prostomial ridge bears two occipital tentacles, one behind the other. The peristome forms a broad support for the prostomium and bears a pair of stout barred palps, which if folded back, would reach setiger 10.

The first setiger is small and bears cirriform notopodial and neuropodial lobes. Neurosetae are present but no notosetae. The notopodial lobes on setigers 2 to 4 are well developed and larger than those on setiger 6 or later segments. The neuropodial lobes increase in size on the first three setigers, decrease on setiger 4 and from setiger 6 onwards become insignificant and more ventrally situated. Setiger 5 as usual is swollen but bears no parapodial projections. Branchiae (Text-fig. 9 b) start on setiger 7 and continue to the posterior end. They are broad strap-like lobes quite separate from the notopodial lobes and just meet their fellows on the mid-dorsal line. The pygidium is small and saucer-shaped.

As mentioned above, there are no notosetae on the first foot. Subsequent feet have winged capillaries in the notopodia and there are no specialised posterior notosetae. The anterior neurosetae are also winged capillaries. Bidentate hooded hooks (Text-fig. 9 d) appear in the neuropodium of setiger 9 and as they barely project above the surface they are difficult to see. At first there are about 8-10 in a row but the number decreases to 4 near the posterior end. The enlarged hooks of setiger 5 are arranged in a curved row centred dorsally. There are about 6 of them alternating with abraded winged capillaries similar to those in other feet. Each hook (Text-fig. 9 c) has a stout shaft which curves and flattens at the tip.

Worn hooks are plain and blunt but a young hook has a narrow marginal flange. There are certainly no accessory teeth. Neither is there any separate tuft of capillaries on setiger 5.

The two striking features of this species are the possession of two occipital tentacles and the late appearance of the neuropodial hooks on setiger 9. Apart from these peculiarities there is some resemblance to *P. antennata* where the hooks appear on setiger 8 and there is one occipital tentacle. However the gills of *P. antennata* do not persist to the posterior end and the special hooks of setiger 5 are in a double, horseshoe-shaped row. There are also some resemblances to *P. kempfi* Southern but again *P. kempfi* has fewer gills and fang-like setae among the enlarged hooks of setiger 5. Holotype: B.M.(N.H.), Reg. No. 1963.1.94.

Prionospio malmgreni Claparède, 1870

Prionospio Malmgreni Claparède, 1870: 73; Fauvel, 1927: 61, fig. 21 a-e.

RECORDS. WCD 82 (1), 97 (7); SCD 214 (2 + 1 juv.).

NOTES. These specimens agree in detail with Fauvel's description. There are 2 pairs of eyes of which the posterior, dorsal pair are the larger. There are 4 pairs of gills on setigers 2 to 5 of which the 2nd and 3rd are short and smooth while the 1st and 4th are both longer and pennate. There is a well marked membraneous ridge across the dorsum of setiger 7 and there are no genital pockets between middle parapodia. Neuropodial hooks start on setiger 11 and notopodial hooks on setiger 36.

There has been considerable doubt about the presence of this species at the Cape but as the above characters show, the present record is quite definite.

Prionospio steenstrupi Malmgren, 1867

Prionospio Steenstrupi Malmgren, 1867: 202; Fauvel 1927, p. 60, fig. 21 f-i.
P. malmgreni var. *dubia* Day, 1961: 489, fig. 3 j-n.

RECORDS. WCD 73 (1), 82 (1), 86 (1), 97 (1), 109 (35 + 8 juvs.), 112 (20 + 5 juvs.), 116 (2 juvs.), 118 (68 + 4 juvs.), 122 (19); FAL 390 (1); SCD 154 (1), 185 (1), 187 (3), 200 (3), 223 (4), 228 (1 + 3 juvs.), 232 (6), 236 (2), 275 (4).

NOTES. The additional specimens show that the eyes which are indistinct in juveniles are invisible in adults. The fourth pair of gills are pennate and in South African specimens always shorter than the first pair. These features as well as the later appearance of neuropodial hooks and the lack of a membraneous ridge across setiger 7 distinguish this species from *P. malmgreni*.

Prionospio sp.

RECORDS. SCD 223 (2 juvs.).

NOTES. The larger of the two specimens measured 4 mm. and is obviously a juvenile. However it certainly does not belong to any species recorded from South Africa.

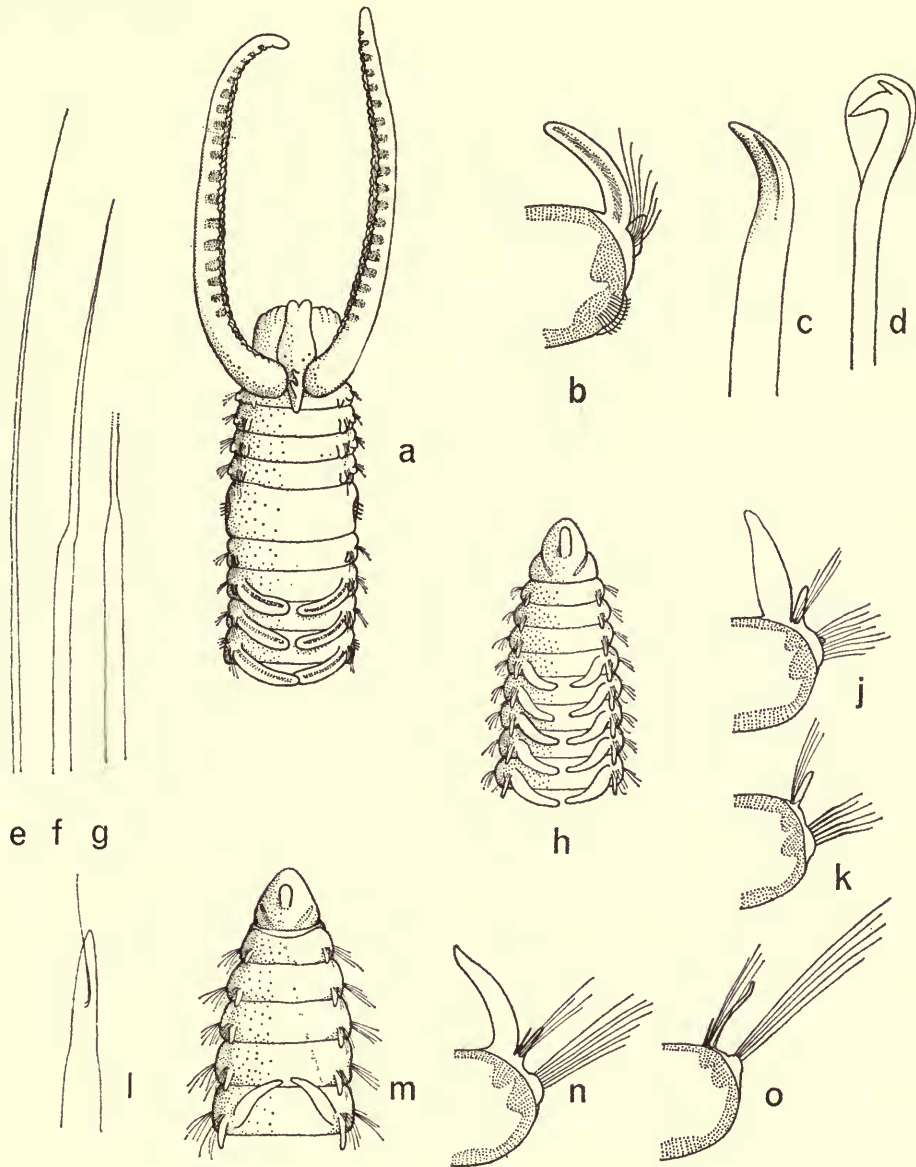


FIG. 9. *Polydora maculata*: (a) anterior end; (b) 11th foot; (c) enlarged hook from 5th foot; (d) neuropodial hook from 11th foot. *Aricidea curviseta*: (e) notopodial capillary from posterior foot; (f) lateral view of posterior neuroseta; (g) plan view of part of posterior neuroseta; (h) anterior end; (j) 20th foot and gill; (k) posterior foot. *Cirrophorus branchiatus*: (l) notopodial spine; (m) anterior end; (n) 16th foot; (o) 10th foot.

The prostomium is oval or shovel-shaped anteriorly and produced back as a ridge which reaches setiger 2. There are 2 pairs of eyes. The peristome lacks winglike expansions and the first setiger is small and without gills. Very long slender branchiae are present on setigers 2-10. Each gill is a smooth, cylindrical filament about 4 times as long as the segmental breadth though the last few are shorter. The postsetal lobes of the notopodia are never conspicuous; in the branchial region they are shorter than the notosetae and further back they are minute papillae no larger than the neuropodial lobes. Dorsal crests were not seen. Neuropodial hooks are certainly present on setiger 15 but possibly appear earlier.

These juveniles do not belong either to *P. cirrifera* or to *P. cirrobranchiata* the only species with approximately the same number of smooth gills. They might be juveniles of *P. polybranchia* Fauvel, 1929 which occurs in the tropical Indian Ocean and has over 40 pairs of gills in the adult.

Family PARAONIDAE

REMARKS ON THE FAMILY. Until recently only three species had been reported from South Africa, namely *Cirrophorus branchiatus* Ehlers, *Paraonis gracilis* (Tauber) and *Paraonis (Paraonides) lyra capensis* Day. Kirkegaard (1959) reported *Aricidea fauveli* Hartman and Day, 1961 added two new species namely *Aricidea capensis* and *Aricidea longobranchiata*. More recent collections include most of these and several new records. These are *Aricidea (Aedicira) belgicae* (Fauvel), *Aricidea curviseta* sp. n., *Aricidea jeffreysii* (McIntosh), *Aricidea suecica simplex* subsp. n., *Paraonis gracilis oculata* Hartman and *Paraonis (Paraonides) lyra lyra* Southern.

The identification of this material necessitated a review of generic characters. Useful reviews of the family are to be found in Cerruti (1909) and Hartman (1957).

The shape of the head is reasonably constant but there is some doubt about the buccal segment. According to Hartman "the first or second visible segment has biramous parapodia". Careful examination of the head shows that in *Aricidea* the mouth opens on the ventral surface of the head and there are faint grooves indicating that the head is formed of a dorsal prostomium with the achaetous peristomium reduced and fused to its ventral surface. A complete and well preserved specimen of *Cirrophorus branchiatus* Ehlers shows that the peristomium is not always so reduced. In this species a dorsal fillet of the peristome is visible between the prostomium and first setiger and the ventral part of the peristome is separated by a groove from the prostomium. In *Paraonis* the mouth is further back and the ventral surface of the first setiger forms the posterior lip. In brief, the first or buccal segment is reduced, always achaetous and fused to the ventral surface of the prostomium; the second segment is normally developed and bears the first pair of parapodia.

Hartman (1957) recognised two genera based on the presence or absence of a dorsal antenna and several subgenera based on the distribution of specialised setae. These characters are clear-cut and easy to observe and as the whole family includes some fifty species it is suggested that the subgenera be given full generic rank. The following key covers the species recorded from South Africa and one or two others marked with an asterisk which may be found in this area at a later date.

KEY TO GENERA AND SPECIES OF PARAONIDAE FROM SOUTH AFRICA

1. Prostomium with a median dorsal antenna 2
 Prostomium without an antenna 10
2. Specialised setae appear among the capillaries of posterior neuropodia (genus *Aricidea*) 3
 Specialised setae appear among the capillaries of posterior notopodia (genus *Cirro-phorus*) *Cirrophorus branchiatus*
 No specialised setae among the capillaries either in the notopodia or neuropodia (genus *Aedicira*) *Aedicira belgicae*
3. Specialised posterior neurosetae numerous with a stout shaft abruptly tapered to a slender blade 4
 Specialised posterior neurosetae as a few (5 or less) sigmoid hooks often with a hood 5
4. Specialised neurosetae with an incomplete joint at the junction of shaft and slender tip *Aricidea fragilis**
 Specialised neurosetae with a kink but no joint at the junction of shaft and blade *Aricidea curviseta*
5. Specialised neurosetae are sigmoid acicular hooks sometimes with a terminal filament but no hood 6
 Specialised neurosetae are hooks with a short or tapering hood over the apex 7
6. Acicular hooks with a terminal filament in middle segments but quite plain posteriorly
 Eyes present *Aricidea suecica suecica**
 Acicular hooks without a terminal filament even in middle segments. No eyes *Aricidea suecica simplex*
7. Specialised neurosetae with a rounded spioniform hood covering the blunt apex *Aricidea jeffreysii*
 Specialised neurosetae with a delicate pointed hood or arista near the apex 8
8. Pointed hood or arista on the convex side of the apex. Posterior branchiae longer and stouter than middle ones *Aricidea fauveli*
 Pointed hood or arista on the concave side of the apex 9
9. Last few branchiae with swollen bases and greatly elongated tips *Aricidea longobranchiata*
 Last few branchiae decrease in size *Aricidea capensis*
10. Specialised setae among the capillaries of posterior notopodia (genus *Paraonides*) 11
 Specialised setae among the capillaries of posterior neuropodia (genus *Paraonis*) 13
11. Modified notosetae are short, stout, broad-winged capillaries *Paraonides neapolitana**
 Modified notosetae are forked setae 12
12. Postsetal lobe of anterior notopodia one-third the length of the branchia. Prostomium as broad as long *Paraonidea lyra lyra*
 Postsetal lobe of anterior notopodia are minute, inconspicuous papillae. Prostomium longer than broad *Paraonides lyra capensis*
13. Specialised neurosetae have a blunt, curved apex with a ventral guard. Branchiae foliaceous *Paraonis fulgens**
 Specialised neurosetae are unidentate acicular hooks without hoods. Branchiae cirri-form 14
14. Prostomium with eyes *Paraonis gracilis oculata*
 Prostomium without eyes *Paraonis gracilis gracilis*

Aricidea curviseta sp. n.

(Text-fig. 9 e-k)

SCD 197 (1), 237 (3).

DESCRIPTION. The type material comes from station SCD 237. The holotype is 16 mm. long by 0.7 mm. across the branchial region but the posterior region is more slender and rounded. There are 83 segments but the tail end is missing.

The prostomium (Text-fig. 9 h) overlies the small achaetous peristomium and is fused to it though lateral grooves remain. The whole forms a bluntly triangular head about as broad as long. There are no eyes and the median antenna does not reach the tip of the prostomium. The first few setigers are narrowed but in the branchial region each segment is about four times as broad as long. Branchiae appear on segment 4 and persist to segment 40. In other specimens as many as 40 pairs of gills have been observed. Each gill (Text-fig. 9 j) is a stout tapered projection which just meets its fellow in the mid-dorsal line. The last few decrease gradually in size and there is no posterior groups of elongate branchiae. The postsetal lobe of the notopodium is evident from the first segment and is at first rather short and conical. It soon becomes more slender and in the branchial region it is a little less than a third the length of the branchia. There is a small postsetal neuropodial papilla behind the slight lateral swelling on which the seta arise in the branchial region.

In the posterior region the segments are longer, hardly twice as broad as long. The postsetal lobe of the notopodium (Text-fig. 9 k) is a slender filament no longer than that in the branchial region and only half the length of the notosetae. There is no neuropodial projection.

There are two types of setae. In the branchial region both the notosetae and the neurosetae are tapered capillaries without obvious blades or marked curvature. In the posterior notopodia the capillaries (Text-fig. 9 e) are more slender and the number of setae is reduced. Posterior neurosetae (Text-fig. 9 f and g) however are quite different. All neurosetae are similar throughout the posterior region and each consists of a stout shaft which suddenly narrows to a long slender tip. When seen in surface view (Text-fig. 9 g) the sudden narrowing is the only obvious feature but when seen in lateral view (Text-fig. 9 f) it is evident that there is an abrupt curve or kink at the origin of the slender tip. There is no hood or projecting tooth at the point of curvature but the kink forms a slight step and the tip may break off leaving only the stout shaft.

Possibly this species is most closely related to *A. uschakovi* Zachs, 1925 from Arctic seas or possibly to *A. fragilis* Webster, 1879 from Sweden. In the former each posterior neuroseta has a fine hairlike arista at the end of the stout sigmoid shaft, which might be a further development of the abrupt decrease in thickness which occurs in *A. curviseta*.

In *A. fragilis* as described by Hartman (1957) there is an incomplete joint or pseudoarticulation at the junction of the stout shaft and the slender blade. There is no sign of such an articulation in *A. curviseta*. Holotype: B.M.(N.H.), Reg. No. 1963.1.106.

Aricidea jeffreysii (McIntosh, 1879) *sensu* Cerruti, 1909

Scolecolepis Jeffreysii McIntosh, 1879 : 506, pl. 65, figs. 13, 14.

Aricidea jeffreysii : Cerruti, 1909 : 409, pl. 18, figs. 1-6, 9-18, 22-26 ; Fauvel, 1927 : 75, fig. 25 a-e.

RECORDS. FAL 397 (1).

NOTES. The single specimen is incomplete, measuring 9 mm. by 0.4 mm. for 70 segments. The prostomium is bluntly rounded anteriorly and lacks eye-spots. The median antenna is cylindrical and just projects beyond the anterior margin of the prostomium. Branchiae start on setiger 4 and extend over 18 segments. Each is bluntly cylindrical and its length equals half the width of the segment. The postsetal lobes of anterior segments are tapered and half as long as the gills ; in posterior segments they remain the same length but become very slender. Most of the setae are capillaries which are curved anteriorly but fine and straight posteriorly. The specialised neuropodial setae are 4-5 hooks which appear in the postbranchial region. The tip curves to a blunt apex which has a rounded spioniform hood.

This is a new record for South Africa but the above description agrees with the account given by Fauvel with three exceptions. The South African form lacks eye-spots, has a longer antennae and considerably shorter gills than shown by Fauvel's fig. 25 a.

Hartman (1957) reported that McIntosh's description of the holotype from Greenland is incomplete and that the description given by Cerruti (1909) and Fauvel (1927) may refer to a different species.

Cirrophorus branchiatus Ehlers, 1908

(Text-fig. 9 l-o)

Cirrophorus branchiatus Ehlers, 1908 : 124, pl. 17, figs. 5-9.

Aricidea (*Cirrophorus*) *branchiata* : Hartman, 1957 : 323.

RECORDS. WCD 82 (1).

NOTES. Ehlers' holotype from the Agulhas bank was incomplete and the present complete and well preserved specimen allows me to amend the original description of this rare species.

The complete worm measures 25 mm. by 0.4 mm. for 120 segments. The body is somewhat flattened with short anterior segments about 3-4 times as broad as long and longer posterior segments less than twice as broad as long. The intersegmental constrictions are very marked posteriorly so that this region appears almost moniliform.

The prostomium (Text-fig. 9 m) is a blunt depressed cone without eyes but has well-marked nuchal slits. The median antenna is short and stout, less than half the length of the prostomium. Ehlers, p. 17, fig. 6, shows the first segment as bearing setae but in fact there is a short peristomial segment between the prostomium and the first setiger. It is just visible dorsally but extends forward below the prostomium ventrally.

In the anterior region the postsetal lobes of the notopodia (Text-fig. 9 *n*) are well developed but in the middle of the body they are reduced until they are no longer than the notopodial spines and then in the posterior region (Text-fig. 9 *o*) they become very long and slender. At the very end of the body there are 4 pairs of cirriform projections. One pair certainly arises from the pygidium but the others may be the postsetal lobes of developing segments. The neuropodia are mere lateral swellings throughout the whole length of the body.

Branchiae appear on setiger 5 and continue for the next 23 segments. Each is a cylindro-conical organ arching forward over the back and its length is equal to $2/3$ the segmental breadth. The last 2-3 pairs are shorter.

Anterior setae up to segment 12 are all fine capillaries without a trace of a blade. From setiger 13 however, 1-2 heavy spines appear in the notopodia and the notopodial capillaries are reduced in number from over 20 in anterior segments to about 6 in posterior ones. Each spine (Text-fig. 9 *l*) is straight and pointed with a very fine curved filament arising some distance below the pointed apex. These filaments were not noted by Ehlers and are easily mistaken for developing capillaries but the examination of several parapodia shows that they occur on all spines that are unbroken. No specialised setae appear in the neuropodia but the capillaries increase in length until they are longer than the segmental breadth and twice as long as the notosetae.

Aedicira belgicae (Fauvel, 1936)

Paraonis Belgicae Fauvel, 1936 : 29.

Aricidea belgicae : Monro, 1939 : 127, fig. 16 *a-b*.

Aricidea (Aedicira) belgicae : Hartman, 1957 : 327.

RECORDS. WCD 109 (3).

NOTES. *Aedicira* was erected by Hartman (1957) as a subgenus of *Aricidea* which lacked specialised neurosetae in posterior parapodia. The type species is *Aricidea (Aedicira) pacifica* Hartman, 1944. As explained earlier, *Aedicira* is here recognised as a full genus characterised by the possession of a median antenna and the lack of specialised setae either in the notopodia or neuropodia.

The three specimens are all incomplete. The longest is 18 mm. by 0.9 mm. for 84 segments. The prostomium which is broadly rounded anteriorly agrees very well with Monro's figure. The peristome is not visible dorsally but may be distinguished ventrally where it is largely fused to the prostomium.

The anterior region is rather flattened with segments 6 times as broad as long ; the posterior region however is more rounded with segments only twice as broad as long. Branchiae appear on setiger 4 and extend over 24 segments. An average gill is a stout tapered organ whose length is equal to $2/3$ the breadth of the segment. The last few gills however are markedly swollen basally and then taper abruptly to short filamentous tips. The postsetal lobe of the notopodium is well developed and tapered and on branchial segments it is half the length of the gill. Posteriorly it becomes very slender but remains the same length.

The capillary setae of both rami in the anterior region are numerous and curved. In the postbranchial region the number of setae decrease particularly in the noto-

podium where only a few fine capillaries remain. The neurosetae are also fine and about as long as the segment is broad. There are no modified setae in either ramus.

Aedicira belgicae is an Antarctic species and has not been recorded from South Africa before. The genus is characterised by the lack of specialised setae and as the specimen is broken at segment 84 some doubt as to the identification must remain.

***Paraonis gracilis gracilis* (Tauber, 1879)**

Aonides gracilis Tauber, 1879 : 115.

Paraonis gracilis : Hartman, 1957 : 330, pl. 44, figs. 4-5.

Aonides gracilis : Ehlers, 1913, p. 512.

RECORDS. SCD 223 (7).

NOTES. The only other record of this species from South Africa is Ehlers' doubtful record from False Bay ("Simonstown"). In Ehlers' brief description there is no mention of eyes, a character which separates *P. gracilis gracilis* from *P. gracilis oculata* Hartman, 1957, a subspecies which has recently been recorded by me (Day, 1963) from 1200 metres west of Cape Town.

The present specimens agree in detail with the stem form. They lack eyes and there are about 12 pairs of branchiae starting on setiger 7-9. The postsetal notopodial lobes are small throughout and the specialised neurosetae of the posterior region are 2-3 stout sigmoid hooks with blunt unidentate tips and no trace of a hood or arista.

This species seems to be world wide in distribution.

***Paraonides lyra lyra* (Southern, 1914)**

Paraonis (Paraonides) lyra Southern, 1914 : 94, pls. 9-10, fig. 22 a-c ; Fauvel, 1927 : 72, fig. 24 a-f.

RECORDS. WCD 112 (common).

NOTES. *Paraonides lyra capensis* (Day, 1955) was reported by me as *Paraonis lyra* var. *capensis* from the Knysna estuary. When the present specimens were compared with paratypes of *P. l. capensis* the following differences were observed.

In *P. l. capensis* the prostomium is obviously longer than broad, the postsetal lobes are always minute or invisible and the setae are shorter than the width of the body. In *P. l. lyra* the prostomium is about as broad as long, the postsetal lobes of the notopodia are well marked in the branchial region and in the posterior region the neuropodial capillaries are much longer than the segmental width. Southern has suggested that the latter character may be a sexual feature.

? *Paraonides* sp.

RECORDS. WCD 92 (2).

NOTES. Two minute threadlike worms 4 mm. long by 0.1 mm. but broken after the 46th setiger. At first sight there appear to be no projections of any sort.

Examination under high power shows an ovoid prostomium without an antenna but with a pair of minute eyes, a reduced achaetous peristome quite separate from the prostomium and behind this numerous biramous segments. The notopodia bear minute postsetal papillae which are easily overlooked and there are no gills. There are no neuropodial projections. There are slender capillaries in both rami throughout the body and in addition there are 1-2 short forked setae in the notopodia from setiger 2. These are similar to the forked setae of *Paraonides lyra* with the longer ramus bearing spinules on its inner margin.

The absence of gills is peculiar. It is possible however that they are juveniles and that gills develop later.

Family COSSURIDAE nov.

REMARKS. The family Cirratulidae to which the genus *Cossura* Webster & Benedict, 1887 has hitherto been referred, has been a dumping ground for a wide diversity of genera. Fauvel (1927) recognised 12 European genera divided between two subfamilies. Hartman (1959) agreed with earlier workers in transferring *Streblospio* to the Spionidae and recognised *Ctenodrilidae* Kennel, 1882 as distinct from *Cirratulidae* Carus, 1862. Within the Cirratulidae she recognised 14 valid genera. Among these are *Acrocirrus*, *Ledon* and *Macrochaeta* all of which have prostomial projections and compound setae and *Caulleriella*, *Chaetozone*, *Cirratulispio*, *Cirratulus*, *Cirriiformia*, *Cossura*, *Dodecaceria*, *Pentacirrus*, *Pseudocirratulus*, *Tharyx* and *Timarete* which lack prostomial projections and have no compound setae.

The genus *Cossura* is now known through 5 species. It agrees with the typical cirratulids in lacking prostomial projections and projecting parapodia and in possessing capillary setae with flattened blades. However it differs from typical cirratulid genera in three important features. It lacks grooved food-gathering peristomial palps or the homologous grooved tentacles inserted on anterior segments. It lacks paired cylindrical gills above the notosetae and it possesses 3 long anal cirri. The only projection is a single very long median gill which arises from the second or third setigerous segment. Some workers have referred to this as a "tentacle" but it is quite different in structure from the grooved tentacles of the typical cirratulids.

There is no more reason to include *Cossura* among the Cirratulidae than there is to include *Paraonis* which does possess gills. It is suggested in fact that *Cossura* should be placed in a new family, *Cossuridae*, defined as follows:

Small threadlike worms with numerous similar segments. Prostomium conical. Pharynx eversible, soft and unarmed. No head appendages either on the prostomium or peristomium. No parapodial lobes on any segment. The first 1-2 segments behind the peristomium achaetous but subsequent segments with one or two bundles of simple capillary setae which usually have flattened blades with spinulose margins. A single very long branchial filament arises from the middle of the dorsum of setiger 2 or 3. Pygidium often with 3 long anal cirri.

Cossura coasta Kitamori, 1960

Cossura coasta Kitamori, 1960 : 1082, fig. 1 a-f.

RECORDS. WCD 53 (1 juv.), 79 (1), 106 (12) ; SCD 228 (3), 232 (1).

NOTES. The prostomium is a blunt cone a little longer than broad. There are no eyes nor head appendages. Behind the prostomium there are two apodous rings with the ventral mouth opening between them. Each of the rings is as long as one of the setigerous segments. They are regarded here as the peristome and the second segment but it is possible that the first ring is part of a biannulated prostomium or that the two rings together form part of a biannulate peristome. The proboscis which was everted on one specimen has a lobed margin.

Behind the second apodous ring there are 40 cylindrical setigerous segments in the longest fragment which measures 7 mm ; none of the specimens was complete.

There are no parapodial projections and the setae arise directly from the sides of the body. In the posterior segments the setae obviously arise in two fans, so that these segments are clearly biramous. Further forward however the two bundles approach one another very closely, until those of the first setiger form a single bundle. The second and subsequent setigers seem to have two bundles but some doubt must remain. In each ramus the setae are arranged in two rows ; an anterior row of shorter setae and a posterior row of longer ones, almost twice the length of the anterior row. All setae are capillaries with rather flattened blades having a spinulose or hispid margin.

A single very long slender gill (the "tentacle" of other workers) arises from the anterior margin of setiger 3 in the mid-dorsal line. In contracted specimens it is not very clear whether this gill actually arises from setiger 3 or setiger 2.

A discussion of the species of *Cossura* is given by Reish (1958). The specific differences are based on the number of apodous segments behind the prostomium, the number of uniramous setigerous segments and the position of the gill. As shown above these differences are somewhat slender evidence for specific identification but the characters of the present specimens fit the description of *C. coasta* Kitamori from Japan better than others. *C. coasta* however is very close to *C. candida* Hartman (1955) from California.

As far as I am aware this is the first record of *Cossura* from the Southern hemisphere.

Family CIRRATULIDAE

Tharyx marioni (St. Joseph, 1894)

Heterocirrus Marioni Saint-Joseph, 1894 : 56.

Tharyx marioni : Fauvel, 1927 : 100, fig. 35 a-b ; Day, 1961 : 503 with synonymy.

RECORDS. One specimen obtained by a dredger prospecting for diamonds north of the Orange River mouth in 5-10 fathoms.

NOTES. This is a new record for South West Africa.

Family OPHELIIDAE

Ophelia cf. *roscoffensis* Augener, 1910

Ophelia roscoffensis Augener, 1910: 237.

RECORDS. SCD 247 (1 + 1 juv.).

NOTES. The larger of the two specimens is 18 mm. long. It has the usual fusiform shape with 8 prebranchial, 20-21 branchial and 3-4 posterior abranchiolate segments, there being one more gill on one side. Thus the total is 32 setigers. There is no achaetous segment before the pygidium. Branchial fenestrations are absent.

Crimped dorso-lateral ridges extend from setiger 29 to the pygidium which bears an arc of 12 small cirri dorsally and two very stout conical cirri ventrally. The neurosetae are half the length of the notosetae and the gills taper evenly.

O. roscoffensis was redescribed by Tebble (1952: 565, fig. 5) from a large (51 mm.) specimen obtained off Plymouth; it has 8 abranchiolate, 23 branchiate and 1 posterior abranchiolate setiger making a total of 32 setigers as in the present specimens. However it has 2-3 more branchial segments and correspondingly fewer posterior abranchiolate setigers. It may be that additional branchiae appear on larger individuals. It also agrees in the lack of branchial fenestrations and in the details of the pygidium. *Ophelia praetiosa* (Kinberg) from Patagonia as described by Hartman (1948: 115) is also close with 8 abranchiolate, 18 branchiate and 5 postbranchial setigers making a total of 31 setigers. This species also lacks branchial fenestrations but has 19 small anal cirri as well as the large ventral pair.

More material is required to determine the variability in numbers of branchiae.

Family SCALIBREGMIDAE

Asclerocheilus capensis sp. n.

(Text-fig. 10 a-f)

RECORDS. SCD 236 (1).

DESCRIPTION. The type locality is 34° 51' S./23° 41' E. in 183 metres. The holotype is a single incomplete specimen 5 mm. long by 1.0 mm. broad with 16 setigers and probably represents half of the complete worm.

The prostomium (Text-fig. 10 a) is quite pale without any trace of eye-spots and bears a pair of short stout lateral lobes. The peristome is achaetous, narrow dorsally and incomplete ventrally so that the lower lip appears to be formed by setiger 1.

The body is oval in section and somewhat depressed with the first 10 to 12 setigers broader than those which follow. The first three setigers are not clearly annulated but from the 6th onward all segments are quadriannulate and tessellated dorsally. The ventral marks are not so regular or clearly defined. There are no parapodial lobes or gills and the setae arise from slight swellings on the body wall. Anterior notosetae are dorsal in origin but later ones from about the 12th segment are lateral like the neurosetae.

Setigers 1 and 2 bear curved acicular setae and capillaries in both rami. There are 15 or more curved acicular setae in the notopodium of setiger 1 and 4-6 long capillaries, but in the neuropodium there are only a few acicular setae, many more capillaries, and the distinction between the two types of setae is not so marked. In setiger 2 (Text-fig. 10 *b*) the notopodium has only about 6 acicular setae and an equal number of capillaries. All subsequent segments (Text-fig. 10 *c*) lack acicular setae and bear long fine capillaries and a few short forked setae in both rami.

The capillaries (Text-fig. 10 *f*) are fine and tapered without any ornamentation. The acicular setae (Text-fig. 10 *e*) are fairly stout and taper abruptly near the end to fine tips. The forked setae (Text-fig. 10 *d*) have two unequal prongs and the inner margins of both are spinulose.

Two species of the genus *Asclerocheilus* have been described, namely *A. intermedius* (St. J.) with acicular setae in both rami of setigers 1, 2 and 3, and *A. beringianus* Uschakov, 1955 from the Bering Sea with acicular setae confined to the notopodia of setigers 1 and 2. *A. capensis* appears to be intermediate between the two, but further work may show that all three are merely growth forms of *A. intermedius*. Holotype: B.M.(N.H.), Reg. No. 1963.1.132.

Parasclerocheilus capensis Day, 1961

Parasclerocheilus capensis Day, 1961: 517, fig. 10 *c-f*.

RECORDS. Collected by a dredger prospecting for diamonds in 10-20 metres just north of the Orange River mouth.

NOTES. This is a new record for South West Africa.

Family MALDANIDAE

Euchymene sp.

(Text-fig. 10 *g*)

RECORDS. SCD 187 (fragments).

NOTES. Although the material contains both anterior and posterior ends, the number of setigers is unknown. Nevertheless the characters suggest that the species is new to South Africa and thus worth recording.

The prostomium is bluntly triangular but lacks ocelli. The cephalic plate is oval with a well developed rim which slopes back smoothly to a median posterior notch. There are no lateral notches. The nuchal grooves are long and straight, fully 4/5 the length of the cephalic plate.

Setigers 1-5 are short but 6 and 7 are longer. Setiger 8 is shorter than 7 but subsequent ones become 4-5 times longer than broad. Glandular bands are well marked from setiger 3 to 6, and there is a faint midventral streak from setiger 1 onwards. The posterior end bears two achaetous preanal segments in front of the well marked pygidial ring and funnel. The two preanals together are just shorter than the last setiger and the first is twice as long as the second. The funnel has 18-24 cirri which alternate in length; the ventral one is much longer than the rest. The anus is sunk in the funnel and a ventral valve is lacking.

Notosetae include the usual winged capillaries with a few fine feathered forms in posterior notopodia. The neurosetae of setigers 1-3 are represented by 2-3 acicular spines (Text-fig. 10 g) with sharply bent ends bearing 3 vestigial denticles above the rostrum but no trace of a tendon below. Later neurosetae are numerous well developed hooks with a vertical series of 6-7 teeth above the main fang and strong tendons below.

The only species of *Euclymene* recorded from South Africa with a smooth (non-crenulate) cephalic margin and 2-3 acicular neurosetae with denticles is *E. oerstedii*. Kirkegaard's (1959) record from the Cape is based on a fragmentary specimen and thus doubtful. The present material however has only two achaetous preanals, no ocelli and lacks lateral notches in the cephalic margin.

***Euclymene* cf. *quadrilobata* (Sars, 1865)**

(Text-fig. 10 h-j)

Clymene quadrilobata Sars, 1865 : 15.

RECORDS. SCD 223 (3 fragmentary specimens).

NOTES. The specimens are all broken. The longest fragment has 13 setigers and measures 45 mm. by 1.0 mm. The fragments obviously belong to a species new to South Africa but the number of setigerous segments is unknown. The main characters may be summarised as follows :

Anterior end truncate with a rounded cephalic plate (Text-fig. 10 h) almost at right angles to the body. Prostomium small and rounded. Eye-spots present. Nuchal grooves straight, very short, less than half the length of the cephalic plate. Cephalic rim very low and thick with a pair of lateral depressions and a single median posterior notch. Number of setigerous segments unknown. Glandular bands well marked on setigers 3 to 7. A faint mid-ventral streak from setiger 1 onwards. Posterior end with 4 achaetous preanals each half as long as the last setiger. Pygidial ring and funnel well marked, the latter bearing 24 unequal cirri. Anus sunken in the funnel. No ventral valve. Notosetae are winged capillaries. Neurosetae of setigers 1-3 represented by a single stout spine (Text-fig. 10 j) with faint indications of denticles above the rostrum. Later neurosetae are rows of numerous hooks each with 4-5 well developed teeth above the main fang and a few fine tendons below.

The main characters are generally similar to those described by Arwidsson (1906) for *Pseudoclymene quadrilobata* (Sars) and there are also resemblances to *Clymene (Isocirrus) wolfi* Kirkegaard, 1959 from the Gold Coast.

***Praxillella* cf. *affinis* (Sars, 1872)**

(Text-fig. 10 k-l)

Clymene affinis Sars, 1872 : 412.

Clymene (Praxillella) affinis : Fauvel, 1927 : 180, fig. 62 f-l.

RECORDS. WCD 112 (2).

NOTES. The largest of the two specimens was complete and measured 23 mm.

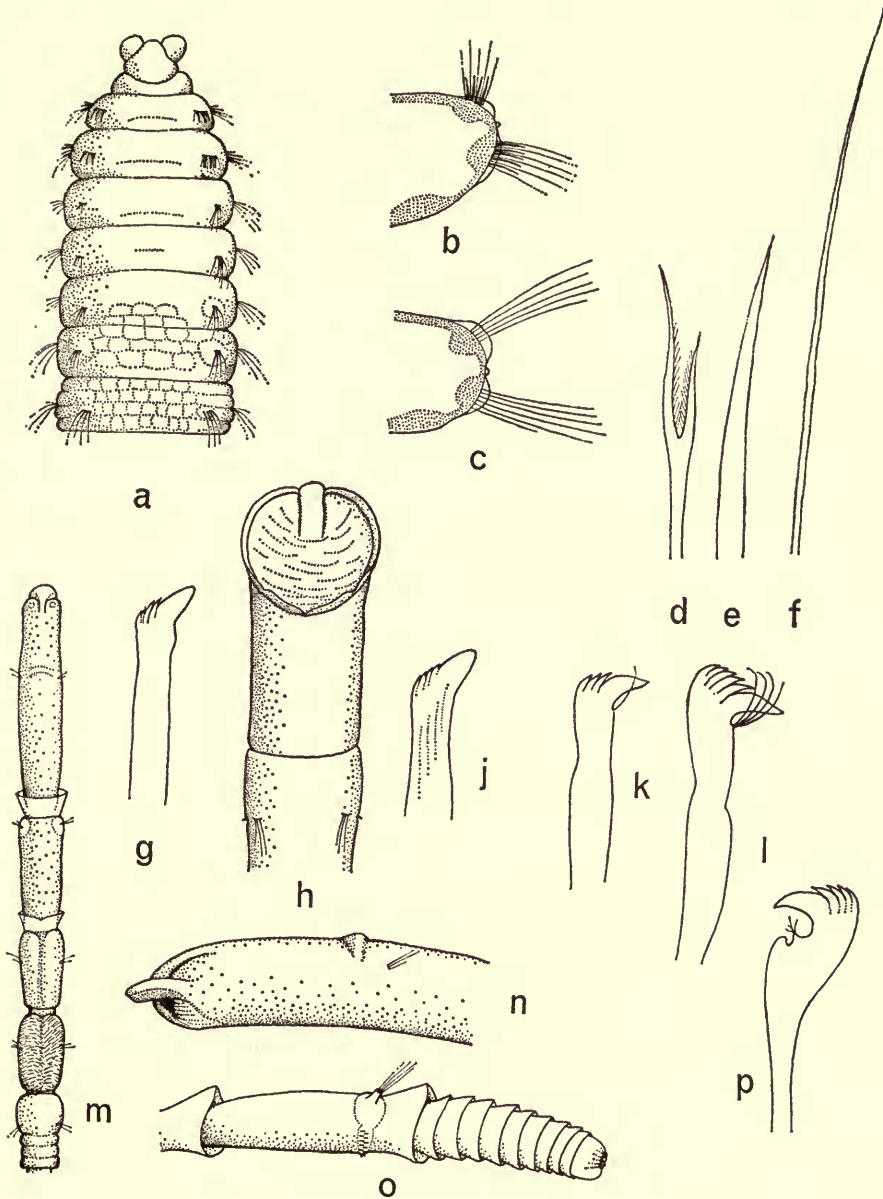


FIG. 10. *Asclerocheilus capensis*: (a) anterior end; (b) 2nd foot; (c) 12th foot; (d) forked seta; (e) notopodial acicular seta from 2nd foot; (f) capillary seta. *Euclymene* cf. *oerstedii*: (g) neuropodial spine from 2nd foot *Euclymene* cf. *quadrilobata*: (h) head; (j) neuropodial spine from 2nd foot. *Praxillella* cf. *affinis*: (k) neuropodial spine of 2nd foot; (l) neuropodial hook from 5th foot. *Rhodine gracilior*: (m) dorsal view of anterior end; (n) lateral view of head; (o) lateral view of posterior end; (p) neuropodial hook.

by 0.4 mm. It is uniformly pale brown in alcohol. There are 18 setigerous segments, 3 achaetous preanals followed by the pygidium which has a circle of 12 subequal cirri and a protruding anal cone with a large ventral valve.

The prostomium is bluntly triangular without eyespots. The cephalic plate is oval and the marginal rim has a pair of faint lateral notches and a better marked posterior notch. The rim is high in front of the lateral notches and distinctly lower behind them. The nuchal grooves are long and straight, fully $\frac{4}{5}$ the length of the cephalic plate. Setigers 1-8 are 2 to 3 times longer than broad, setigers 9-15 about 4 times as long as broad, but later ones gradually shorten until the 3 preanals are together just equal to the length of the last two setigers. Setiger 1-3 have slight anterior glandular bands, setigers 4-8 are markedly glandular and from setiger 8 onwards there is a narrow mid-ventral glandular streak.

Setiger 1-3 have 2-3 hooks in each neuropodium but each of the later segments has a row of about 10. The hooks of the first three setigers (Text-fig. 10 *k*) have 3 well marked teeth above the rostrum and there is even a trace of a tendon below. The hooks of later setigers (Text-fig. 10 *l*) are much better developed with a vertical crest of about 5 denticles above the rostrum and well marked tendons below. The notosetae include about 4 stout capillaries with narrow wings and 3 fine capillaries without visible wings.

There are several differences between the South African form described above and Fauvel's account of *P. affinis*. Eye-spots are absent, there is no enlarged anal cirrus, the finer notosetae are not spinulose and above all the neurosetae of setigers 1-3 have much better developed denticles and even possess faint tendons, so that the anterior neurosetae approach the condition found in the genus *Axiothella*. However, these South African specimens are small and these may be juvenile characters. Some doubt as to the identification must remain until larger specimens have been found.

As shown earlier (Day, 1955), *Praxilla capensis* McIntosh, 1885 is indeterminate since the posterior end is missing. In any case the neurosetae of setiger 1-3 are smooth, straight and acicular, one per parapodium.

Lumbriclymene cylindricauda Sars, 1872

Lumbriclymene cylindricauda Sars, 1872: 413; Arwidsson, 1906: 40, pl. 1, figs. 15-24; pl. 7, figs. 219-221.

RECORDS. SCD 237 (1 juv.), 251 (1).

NOTES. The adult specimen is broken into two pieces which together measure 60 mm. by 1 mm. while the juvenile was complete with 19 setigers and measured 35 mm. There are 3 well developed achaetous preanals and then 3 indefinite ones preceding the bluntly conical pygidium.

These specimens agree with Arwidsson's description with one or two minor exceptions. The colour markings appear to differ. There is a dorsal brown bar on the buccal segment and similar bars in front of and behind each parapodium of the first three setigers; there is also a well marked midventral glandular streak stretching

from setiger 11 to setiger 14, and the neuropodial hooks on setiger 4 have 4 teeth above the main fang, not 2-3. Later hooks also have 4, but there are minor lateral teeth as well.

The juvenile was encased in a brittle tube composed of coarse sand and foraminiferan shells.

The only other species of the genus recorded from South Africa is *L. minor* which differs in having only 3 achaetous preanals and a dorsal anus.

Rhodine gracilior Tauber, 1879

(Text-fig. 10 *m-p*)

Rhodine loveni gracilior Tauber, 1879 : 123.

Rhodine gracilior : Arwidsson, 1906 : 74, pl. 2, figs. 53-58 ; pl. 7, figs. 237-241 ; pl. 8, figs. 242-243 ; Wesenberg-Lund, 1949 : 344 ; Kirkegaard, 1959 : 65.

Rhodine cf. *gracilior* : Day, 1961 : 514.

RECORDS. WCD 86 (3), 112 (2), 118 (2), 121 (1).

NOTES. The additional material includes an anterior fragment with a head and 13 setigers (Text-fig. 10 *m*), a posterior fragment with 7 setigers, 10 achaetous preanals and the pygidium and finally a juvenile with 21 setigers but without a head or posterior end. It is estimated that an adult was about 50 mm. long by 1 mm. wide with a minimum of 23 setigers.

The striking features include the very long head and first setiger (Text-fig. 10 *n*), the dark red 4th setiger, the smooth-edged posterior collars on posterior segments, (Text-fig. 10 *o*) the numerous achaetous preanals, the bluntly conical pygidium and the backwardly bent and expanded heads of the hooks (Text-fig. 10 *p*).

The tube is fragile and membranous.

Family PECTINARIIDAE

Pectinaria capensis (Pallas, 1766)

Nereis cylindraria capensis Pallas, 1778 : 118.

Pectinaria capensis : McIntosh, 1904 : 76, pl. 7, figs. 35-36 ; Day 1955, p. 432.

RECORDS. In 10 metres on sand, 20 miles north of Orange River mouth.

NOTES. This species has not been recorded from South West Africa before. It was obtained by a suction dredger prospecting for diamonds. The specimens are large (up to 120 mm. long) and unusual in that the tube is composed of sand grains arranged in regular transverse rows. All Cape specimens examined have tubes composed of short lengths of sponge spicules arranged like bonded bricks. Careful comparison of the Cape and South West African forms showed no differences in the animal but the description given by me (Day, 1955) needs amendment.

There may be 11 or as many as 15 paleae on each side, there is one, not two achaetous prescapal segments and a slender anal cirrus is present on the ligule though often broken off. It may be added that the scaphe is oval in outline, and concave dorsally with 2 pairs of cirriform marginal papillae near the base and one pair distally near the origin of the ligule.

Pectinaria (Lagis) koreni cirrata subsp. n.

(Text-fig. 11 a)

RECORDS. NAD 27 (2)—dredged on 13th July, 1959 off the Natal coast at 29° 53·5' S./31° 06·5' E. in 71 metres on dark brown sand.

DESCRIPTION. The holotype is 11 mm. long by 2 mm. across the first setiger. The tube is composed of coarse sand grains.

Operculum (Text-fig. 11 a) with 10 + 10 paleae. Margin of the operculum smooth and unusually high. Its ventral ends are fused to the bases of the first pair of tentacular cirri. The veil which bears about 18 slender marginal cirri is also fused to the bases of the tentacular cirri on each side so that the tentacular cirri mark the junction of the veil and opercular margin, i.e. the veil is completely fused to the operculum. First pair of tentacular cirri slender and longer than the paleae; second pair a little shorter. The semicircular ventral flange between the second pair of tentacular cirri is incised to form 15–20 slender cirri. Two pairs of lamellate gills. Ventrums of branchiferous segments and setiger 1–2 with three glandular ventral pads.

Behind the branchiferous segments there are 3 segments with notosetae only, 12 segments with notosetae and uncini, and then 2 achaetous prescapal segments followed by the scaphe.

The scaphe is oval and the margin is incised to form a median basal lappet and 5 pairs of marginal lappets. Scapal hooks were not seen but were probably retracted. The anal ligule is tongue-shaped with a smooth margin and a small anal cirrus.

Notosetae include a series of broad-bladed capillaries and a smaller series of capillaries with bent and finely dentate tips. Uncini have 2 rows of 5–6 large teeth and a close set group of numerous small teeth above the basal gouge.

The main characters are similar to those of *P. (Lagis) koreni* but the slender cirri on the ventral flange between the second pair of tentacular cirri are quite different from the 8–10 blunt lobes found on the same flange of *P. koreni*. Holotype: B.M.(N.H.), Reg. No. 1963.1.138.

Family AMPHARETIDAE

Isolda pulchella Müller, 1858

Isolda pulchella F. Müller, 1858: 219; Augener, 1918: 517, pl. 7, fig. 229, text fig. 88.

Isolda warnebroensis Augener, 1914: 82, pl. 1, figs. 14–15, text-figs. 13 a–c.

Isolda sibogai Caullery, 1944: 102, fig. 83.

MATERIAL EXAMINED. British Museum (Natural History) Reg. No. 76: 10: 4: 13 from Brasil *I. pulchella* (Müller det.) and Reg. No. 1933: 3: 18: 67–69 from Burma, *I. warnebroensis* (Monro det.).

S. A. RECORD. SCD 187 (2 + 1 juv.).

A comparison of the specimen of *I. pulchella* from Brasil, of *I. warnebroensis* from Burma and the large fresh specimens from South Africa shows that they are all

identical. Since there is no modern description of *I. pulchella* and some doubt as to its relations with other species, a short description is given below and the various species discussed.

Body up to 45 mm. long with 60 segments. Colour brown, buccal cirri speckled when fresh. Prostomium snoutlike, rounded anteriorly and pinched in at the sides. No eyes nor glandular ridges. Buccal cirri short, stout, without papillae but grooved along one side. Two swollen lateral folds along the sides of the head extend back to segment VI and join a transverse dorsal fold which has a smooth margin. Two groups of 4 gills on segment III, each group united basally and arranged 2 in front and 2 behind. The two outer gills of each group are smooth and tapered; the two inner ones are bipennate for more than half their length with well developed lateral pinnules. Segments III, IV and V with fine, pointed neurosetae embedded in the lateral fold. No neurosetae on segment VI. No notosetae on segment III which bears the gills. A pair of stout dorsal hooks on segment IV behind the gills. Segments V and VI with small notopodial capillaries. Segment VII and the next 12 segments bear smooth-winged notopodial capillaries and neuropodial uncini. Altogether a total of 17 thoracic setigers. Abdomen with 32 or more segments. Abdominal uncini borne on square pinnules each of which has a small superior papilla. Uncini with a single series of 5 teeth above the small rostral point and a recurved basal prow.

Augener (1914) was doubtful as to whether *I. warnebroensis* from South West Australia was identical with *I. pulchella*, but the only difference he noted was the presence of eye-spots. Specimens from Burma in the British Museum (Natural History) identified as *I. warnebroensis* are identical with *I. pulchella*. *I. sibogae* Caullery, 1944 from Indonesia is even closer for it lacks eye-spots.

I. whydaensis Augener, 1918 from tropical West Africa is a different species. A specimen in the British Museum (Reg. No. 1953:3:1:876) from Accra identified by Tebble 1955 has only 16 thoracic setigers of which 12 bear uncini. Moreover the branchiae are long and slender, the inner two pairs bearing numerous minute lateral pinnules which are quite different from the long paired pinnules of *I. pulchella*.

Samythella affinis sp. n.

(Text-fig. 11 b-e)

RECORDS. SCD 237 (7); 275 (8).

DESCRIPTION. The type material (B.M.(N.H.), Reg. No. 1963.1.142-144) was obtained from station SCD 237 at 34° 51' S./23° 41' E. in 183 metres on a bottom of fine sand. Only one specimen has a complete set of gills. Complete specimens measure 10 mm. by 0.8 mm. across the anterior thorax.

The diagnostic characters may be summarised as follows: Prostomium (Text-fig. 11 e) depressed and bluntly triangular. No eyes nor glandular ridges. Buccal tentacles smooth. Buccal segment and segment II well defined. Segment III (the paleal segment) with a well developed branchial ridge bearing 3 pairs of smooth gills in a single transverse row. No median gap nor nephridial papillae on the

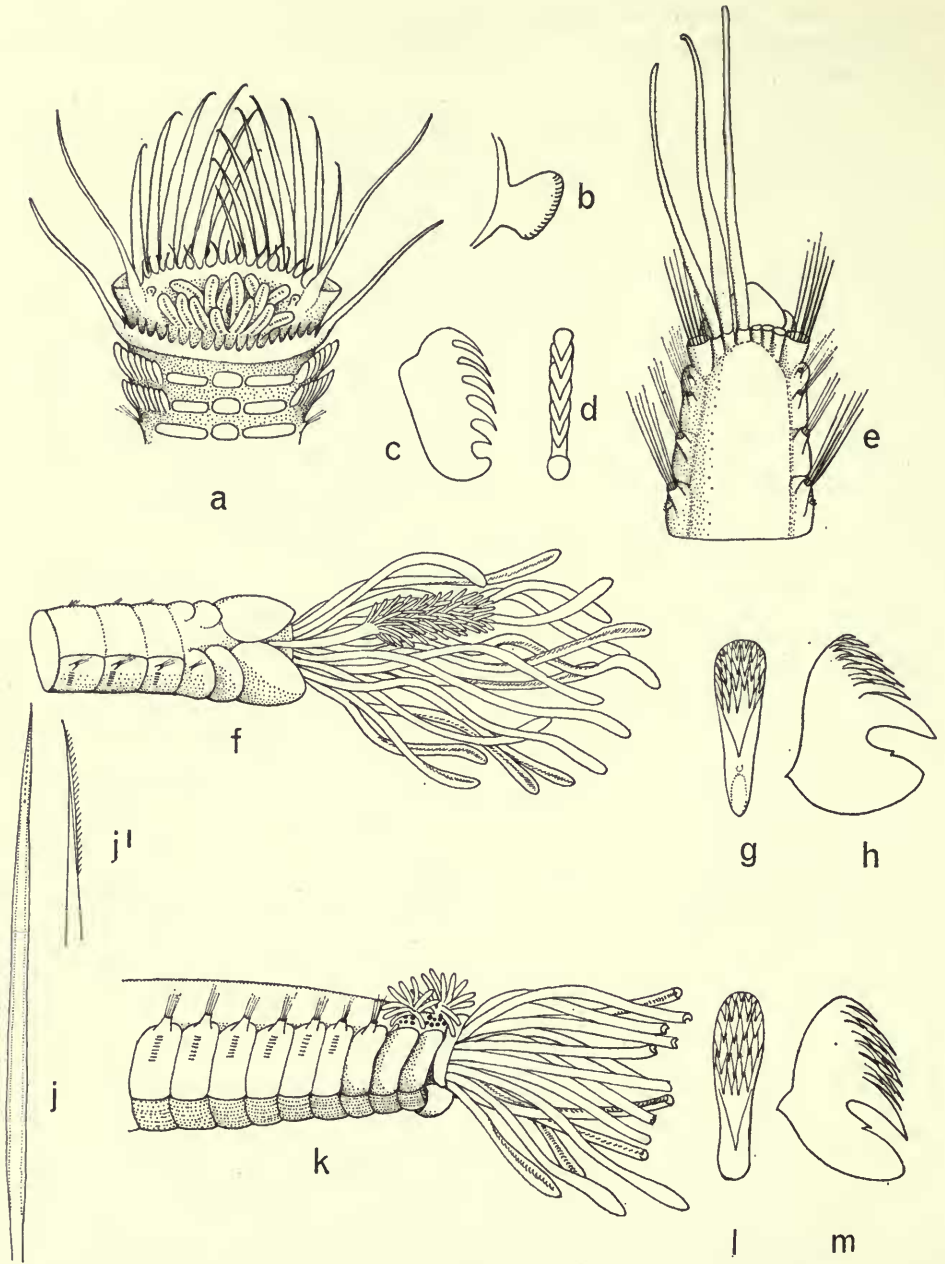


FIG. 11. *Pectinaria koreni cirrata*: (a) ventral view of head; *Samythella affinis*: (b) posterior abdominal pinnule; (c and d) lateral and face view of thoracic hook; (e) anterior end. *Pista unibranchia*: (f) dorso-lateral view of anterior end; (g and h) face-on and lateral views of hook from first row. *Amphitrite pauciseta*: (j, j') notoseta and details of tip; (k) lateral view of anterior end; (l and m) face-on and lateral views of thoracic hook.

branchial ridge. Individual gills tapered and project far in front of the prostomium. Segment III with about 10 paleae on each side of the branchial ridge. Paleae longer than normal capillaries. Segments IV and V with a small notopodia bearing a few small capillaries, segment VI with normal capillaries, segment VII and the next 11 segments with both normal capillaries and uncini. No specialised posterior notosetae. Altogether a total of 15 thoracic setigers behind the paleae. Thirteen thoracic segments with glandular ventral pads.

Eleven abdominal segments with uncini. Anterior abdominal segments with short uncigerous tori, later ones (Text-fig. 11 *b*) with uncigerous pinnules which are expanded distally. No dorsal cirri or rudimentary notopodia.

Thoracic notosetae are smooth-winged capillaries. Thoracic uncini (Text-fig. 11 *c* and *d*) with a single series of 5 teeth and a smaller attachment process above the recurved basal prow.

The generic position of this species is uncertain since there has been no uniformity in the definition of the genera. Seven genera of the subfamily Ampharetinae lack glandular ridges on the prostomium and have 3 pairs of smooth gills; they are *Amythas*, *Aryandes*, *Eusamytha*, *Glyphanostomum*, *Neosabellides*, *Samytha* and *Samythella*. Only *Aryandes* Kinberg has paleae and this is a doubtful genus of which the type species has been lost. Of the rest only *Samythella* and possibly *Eusamytha* agree in having smooth tentacles and a single row of teeth on the thoracic uncini. It is suggested that the characters of the genus *Samythella* be amended to include species with paleae. The proposed definition is as follows:

Samythella Verrill, 1873 (characters amended).

Prostomium a tongue-shaped lobe without glandular ridges. Tentacles smooth. A transverse row of 6 smooth gills on the branchial ridge formed of right and left groups of 3 each. No nephridial papilla on the branchial ridge. Segment III (the branchiferous segment) with notosetae either absent or enlarged to form paleae. Segments IV, V and VI with notopodial capillaries only. Segment VII and the next 11 segments with both notopodial capillaries and uncini. No specialised posterior notosetae. Uncini with a single row of teeth. Abdomen of 11 or more segments sometimes bearing vestigial notopodia above the uncigerous pinnules.

TYPE SPECIES. *S. elongata* Verrill, 1873.

Family TERESELLIDAE

Artacama proboscidea Malmgren, 1865

Artacama proboscidea Malmgren, 1865: 394; Hesse, 1917: 194, pl. 2, fig. 13.

RECORDS. WCD 109 (1).

NOTES. The single specimen is broken posteriorly. The main characters may be summarised as follows. Tentacular lobe horse-shoe-shaped with a dorsal notch. No eye-spots. Tentacles numerous and either broken or very short. A swollen proboscis covered with coarse papillae below the mouth opening. Segments 2 and 3 flanged but do not form lateral lobes. Three pairs of filiform gills on segments

2, 3 and 4. Each gill is a tuft of filaments arising from a basal stump. A large nephridial papilla on segment 3 and small ones on segments 6, 7, 8 and 9. Seventeen bundles of notosetae starting on segment 4. Uncini start on segment 5 and are arranged in double rows on the posterior thorax. Eleven glandular ventral pads. Abdomen incomplete but has 20 segments with large lamellar uncigerous pinnules. The base of each pinnule is constricted and the uncini are limited to part of the ventral margin. Notosetae are winged capillaries with smooth tips and the uncini are avicular with a short base, a stout main fang and a crest of about 20 denticles in 4 irregular arcs.

This is the first record of this genus from South Africa.

Pista unibranchia sp. n.

(Text-fig. 11 *f-h*)

RECORDS. FAL 375 (1), 413 (12).

DIAGNOSIS. A single gill with a stalk and a terminal pom-pom of short filaments. First row of uncini without basal shafts.

DESCRIPTION. The holotype is a complete specimen measuring 10 mm. by 0.5 mm. dredged from Station FAL 413 in False Bay at 34° 12.5' S./18° 37' E. in 48 metres on sand and shell. It is colourless in alcohol and the fragile tube is encrusted with coarse sand grains.

The tentacular lobe (Text-fig. 11 *f*) is short and collarlike with numerous long grooved tentacles. Eye-spots, if present, must be few and minute. The upper lip is well developed. Glandular lateral lobes grow forward from segments 2 and 3 to form a stout sheath which supports the tentacles. The lateral lobes are unusual for they are not limited to the sides of the body but extend dorsally and ventrally practically encircling the anterior end. Small lobes also occur on segment 4. A single median gill is present on setiger 2. There is no sign of any other gills in all the thirteen specimens examined. The gill consists of a stout trunk bearing a terminal tuft of short filaments arranged in 6-7 whorls. The trunk and the tuft of filaments are about the same length.

Notosetae start on segment 4 and there are 17 bundles in all. Uncini start on segment 5 and are arranged in alternating rows on the posterior thorax. Fifteen segments with poorly defined ventral pads.

The abdomen is gently tapered and consists of about 26 long segments. The uncigerous tori are short throughout and only towards the end of the abdomen do they project as square pinnules. The pygidium is missing.

The notosetae are all broad-winged capillaries with smooth tips. The first bundle on segment 4 is rather smaller than the rest. The uncini (Text-fig. 11 *g* and *h*) are arranged in rather short rows and none of them, even those of the first row, have basal prolongations or shafts. The base is rounded, the main fang is very stout and above this is a cap of denticles arranged in 4-5 alternating close-set rows. In profile there appear to be 4-5 teeth but a face-on view shows that the dental formula is roughly MF : 4 : 5 : 7 : 10.

At first sight this species resembles a juvenile *Pista cristata* which has lost all but one of its four pom-pom shaped gills. A closer examination shows no sign of scars where the missing gills should be. The lack of shafts on the first row of uncini suggests *P. macrolobata* Hesse but this species has dichotomously branched gills. Holotype : B.M.(N.H.), Reg. No. 1963.1.153.

***Amphitrite pauciseta* sp. n.**

(Text-fig. 11 *j-m*)

RECORDS. WCD 83 (3), 85 (common).

DIAGNOSIS. This species may be recognised by the presence of pigment granules at the bases of the two pairs of gills and the possession of only 13 thoracic setigers.

DESCRIPTION. The type material consists of 9 specimens selected from station WCD 85 dredged at 33° 06' S./17° 45' E. on mud at a depth of 160 metres.

The holotype is 18 mm. long by 1.0 mm. across the thorax and is pale brown in alcohol. The tube is very fragile with adherent sand grains of various sizes. The tentacular lobe (Text-fig. 11 *k*) is collar-shaped with numerous long grooved tentacles and a few eye-spots. The lower lip is well developed. Small lateral lobes are present on segments 2, 3 and 4 but are not obvious on some of the paratypes. Two pairs of gills on segments 2 and 3. The trunk of each gill is short and the branches are digitiform so that the first impression is that each gill consists of a tuft of stout filaments. At the base of each gill there is a group of reddish subdermal spots probably associated with the vascular system. These spots were seen on every specimen examined and are very characteristic. The holotype also has a few similar spots next to the notopodium of segment 4.

Notosetae start on segment 4 and are present on 13 segments. Uncini start on segment 5 (setiger 2) and are arranged in double rows on posterior thoracic segments. A nephridial papilla is present on segment 3 just lateral to the base of the gill. Ten glandular ventral pads are present from segment 3 to segment 14.

The abdomen is tapered and consists of 42 segments. The uncigerous tori gradually lengthen to become long pinnules on the last few segments. The anus has a pleated margin.

The notosetae (Text-fig. 11 *j*) have narrow blades and end in fine, minutely serrated tips (Text-fig. 11 *j'*). The uncini (Text-fig. 11 *l* and *m*) have short bases and when seen in profile appear to have 5 indistinct teeth above the main fang; in full face however it may be seen that there are numerous irregular arcs of denticles approximating to the formula MF : ca 5 : ca 7 : ca 9 : ca 12.

As far as I am aware this is the only species of *Amphitrite* with less than 17 thoracic setigers. Holotype : B.M.(N.H.), Reg. No. 1963.1.145.

Family **SABELLIDAE**

***Fabricia filamentosa* sp. n.**

(Text-fig. 12 *a-g*)

RECORDS. WCD 83 (2), 109 (10), 122 (2); SCD 223 (4).

DESCRIPTION. The holotype is a complete specimen from Station WCD 109

collected by a grab from 32° 08' S./17° 39' E. in 170 metres on a bottom of dark green mud. There are 9 paratypes.

The whole worm (Text-fig. 12 *a*) is encased in a fragile tube of flocculent debris. It is very slender measuring 4 mm. in length by 0.2 mm. broad and is colourless in alcohol. Each brancial lobe (Text-fig. 12 *b*) bears 3 radioles, each with 5 pairs of very long slender pinnules which extend like a tuft of filaments twice as far as the radiole itself. There are no palps. The whole branchial crown is about a quarter the length of the body. The collar is well developed and continuous ventrally. It is notched back dorsolaterally on each side to form a tongue-shaped median dorsal lappet but the rest of the collar is continuous and has a smooth margin. The median lappet is soldered onto a pair of dorsal lips inside the collar. A pair of conspicuous eyes is present inside the collar at the base of the branchiae. No otocysts were seen.

The slender body consists of 8 thoracic and 3 abdominal segments which differ in length. The first 3 setigers are about twice as long as broad, the 4th and 5th are longer and the 6th, 7th and 8th are about five times as long as broad. The three abdominal segments decrease in length until the third is broader than long. All abdominal segments have swollen tori while the pygidium is tapered and bears a pair of terminal eye spots.

Setiger 1 bears 4-5 narrow-bladed capillaries. The notosetae of setigers 2-8 are 4 capillaries (Text-fig. 12 *c*) with blades which are broad at the base but taper to slender tips. The neurosetae are rows of about 4 long-shafted hooks (Text-fig. 12 *d* and *e*) each with a transverse arc of about 5-7 teeth above the rostrum. In the abdomen each neuropodium bears 3 slender-bladed capillaries and the notopodium has a row of about 15 long-handled uncini (Text-figs. 12 *f* and *g*), each with 6-7 rows of teeth with 3-4 long teeth per row. Holotype: B.M. (N.H.), Reg. No. 1963.1.169.

This species is most closely related to *F. capensis* (Monro). It has a similar collar and elongated segments in the posterior thorax. The important distinctions concern the setae and the branchiae for *F. capensis* has abdominal uncini with very numerous teeth (18 rows of 8 each), thoracic uncini with 2 teeth above the rostrum and then an arc of 12-14 smaller denticles. Moreover *F. capensis* does not have such extremely elongated branchial filaments. It is a much larger worm living gregariously on the shore in sandy tubes.

Fabriciola cf. *mossambica* (Day, 1957)

Fabriciella mossambica Day, 1957: 115, fig. 8 *e-o*.

RECORDS. WCD 83 (2), 108 (4); SCD 233 (4).

NOTES. These specimens are referred to the tropical East African form with hesitation, for the abdominal uncini have a greater number of teeth. They agree in the possession of filamentous palps, a triangular lobe below the mouth in place of a collar, similar thoracic setae and abdominal capillaries but the uncini have many more teeth. A juvenile had 8 rows of 4 teeth and an adult had 14 rows of 8 teeth. In *F. mossambica* there are 7 rows with 2-3 teeth per row. It is possible that this character is more variable than had been realised.

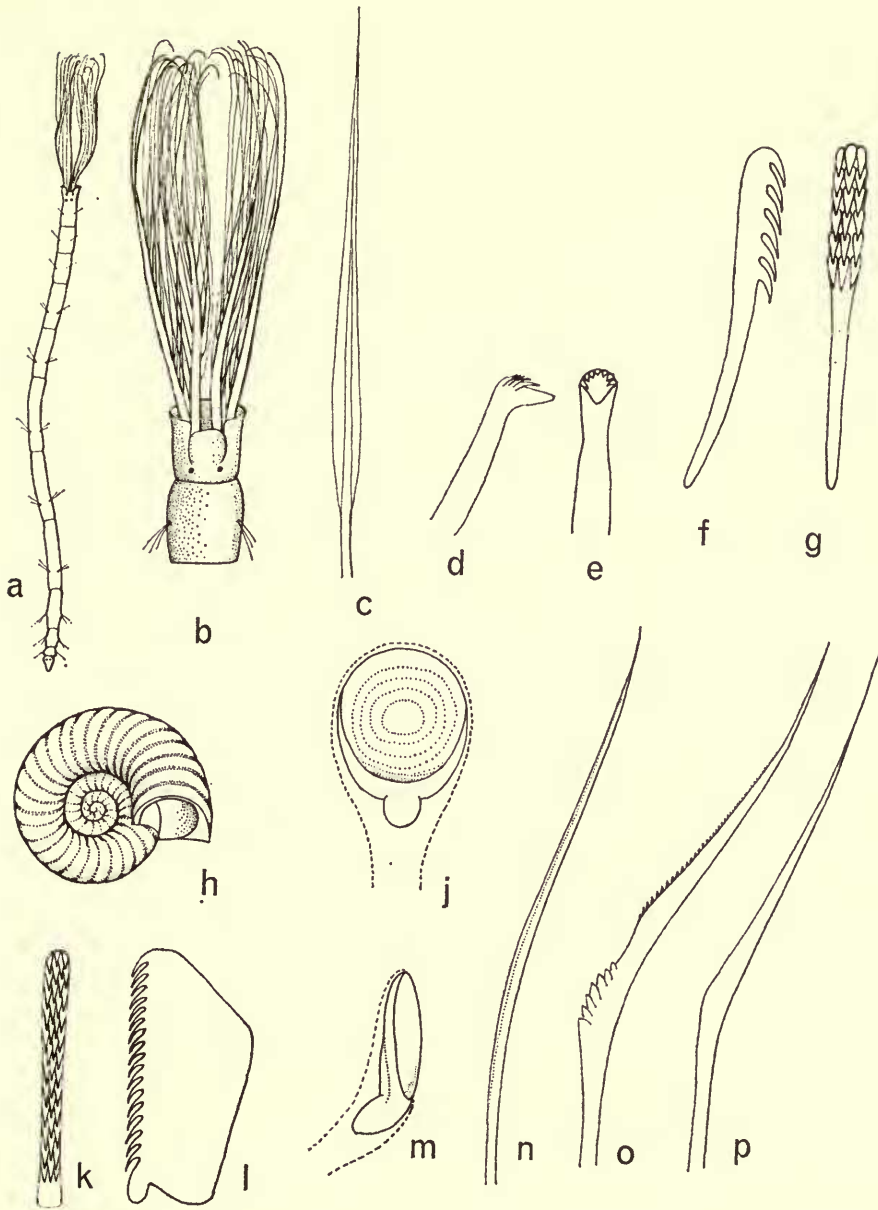


FIG. 12. *Fabricia filamentosa*: (a) entire worm; (b) head; (c) thoracic notoseta; (d and e) lateral and face-on views of thoracic hook; (f and g) lateral and face-on views of abdominal hook. *Spirorbis adeonella*: (h) tube; (j) plan view of operculum; (k and l) edge-on and lateral views of thoracic uncinus; (m) side view of operculum to show talon; (n) fine capillary from first bundle; (o) specialised collar seta; (p) smooth-winged capillary from second bundle.

According to Banse (1956) this species with its filamentous palps should be referred to the genus *Fabriciola*.

Family SERPULIDAE

Hyroides heteroceros (Grube, 1868)

Serpula (*Eupomatus*) *heteroceros* Grube, 1868 : 639.

Hyroides heteroceros : Pixell, 1913 : 75, pl. 8, fig. 2 a-c ; Fauvel, 1953 : 459, fig. 241C.

RECORDS. "William Scoresby" station WS 1022, at 25° 26' S./46° 07' E. in 58 metres on sand and shell.

NOTES. This is a new record for the area which is just south of Madagascar. *H. heteroceros* is widely distributed in the tropical Indian Ocean and the present specimens agree with Pixell's description.

Spirorbis (*Paralaeospira*) *adeonella* sp. n.

(Text-fig. 12 h-p)

Spirorbis (*Laeospira*) sp. Day, 1961 : 557.

RECORDS. SCD 154 (1) ; MB 7 (1 living).

DESCRIPTION. The additional material allows me to amplify and amend the preliminary account in 1961 of *Spirorbis* sp. The holotype was dredged in Mossel Bay growing on the calcareous Polyzoan *Adeonella* sp. at a depth of 19 metres. The shell (Text-fig. 12 h) is 1.5 mm. in diameter and is thick and vitreous with well marked annular ridges. It is coiled clockwise when viewed from above (sinistral). The operculum (Text-fig. 12 j) is oval in outline with a concave surface. The talon (Text-fig. 12 m) is a smoothly swollen knob almost at right angles to the opercular plate which is strengthened by a median ventral ridge. The branchiae consist of 7 unequal radioles with slender tips. Incubation is in the tube. The collar is well developed and the two halves overlap dorsally but are not united. There are 4 thoracic segments but the 4th is asymmetrical. Thus setiger 1 bears the collar setae, setigers 2 and 3 bear both notosetae and uncini but setiger 4 has only a short row of uncini on the concave side of the body. The abdomen is short and consists of about 13 segments.

The collar setae includes a few fine capillaries (Text-fig. 12 n) and several larger setae (Text-fig. 12 o) with very finely serrated blades and a separate dentate lobe at the base. Setigers 2 and 3 also have a few fine capillaries in addition to the numerous smooth-winged capillaries (Text-fig. 12 p). There are no "setae of *Apomatus*". The thoracic uncini (Text-fig. 12 h and l) have 2-3 rows of teeth with about 18 teeth per row. The gouge is expanded and truncate.

Two other species of the subgenus *Paralaeospira* have been recorded from South Africa, namely *S. (P.) patagonicus* and *S. (P.) capensis*. *S. (P.) adeonella* differs from both in having an annulated shell and in lacking setae of *Apomatus*. The talon is also different. Holotype : B.M.(N.H.), Reg. No. 1963.1.179.

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